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INDEX

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Mycological Writings

OF

C. G. LLOYD.

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Synopsis Genera Large Pyrenomycetes, January, 1917.
Large Pyrenomycetes (2nd Paper), July, 1919.
Xylaria Notes No. 1, September, 1918.
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ABBREVIATIONS

The following abbreviations are used in the Index:
M. N.—Mycological Notes (number and page).
Let.—Letters (number and note).
Geog.—Geoglossaceae (page).
Rad.—Genus Radulum (page).
Xyl.—Xylaria Notes (page).
Pyr.—Large Pyrenomycetes (page).
Myths—Myths of Mycology (page).
Syn.—After a species indicates that the name in my opinion is a synonym and without value. The species, however, is not necessarily a synonym in its proper genus.
Miss.—After a species indicates a mis-determination.

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Smallii....M. N. 52, 748, fig. 1123

speciosa.....M. N. 48, 679; M. N. 50, 715; Let. 65, 513

tricolor.....Let. 66, 607

Laschia, The genus....M. N. 46, 645 M. N. 57, 831 (Synonyms there given are not listed here.)

alba.....cfr. M. N. 58, 816

auriscalpium.....M. N. 57, 835, fig. 1395

Baumanniana.....M. N. 46, 646

caerulescens, syn....M. N. 58, 816

caespitosa.....M. N. 46, 646, fig. 921, 922; Let. 65, 509

calamicola.....M. N. 57, 836

cantharelloides..cfr. M. N. 58, 816

celebensis, syn.....M. N. 58, 815

cinnabarina.....M. N. 57, 837

citrinella, syn.....M. N. 58, 816

cucullata, syn.....M. N. 58, 815

Curtisii .....Cfr. M. N. 58, 816

delicata, syn.....M. N. 55, 784

Dussii..... Cfr. M. N. 58, 816

Friesiana.....M. N. 57, 833

Gaillardii.....M. N. 57, 838

gogolensis, syn.....M. N. 46, 647

gracilis.....M. N. 46, 647, fig. 923

intestinalis, syn.....M. N. 50, 708

Javanica, syn.....M. N. 58, 815

lamellosa.....Cfr. M. N. 58, 816

Lauterbackii, syn.....M. N. 46, 646

longicellulis.....M. N. 57, 837

manipularis, syn.....M. N. 46, 646

micropus.....Cfr. M. N. 58, 816

nigro-striata .....M. N. 57, 837

papulata..M. N. 57, 832, fig. 1390; Let. 68, 722

pensilis, syn.....M. N. 58, 816

pezizoidea ..M. N. 57, 836, fig. 1396

purpurea, syn.....M. N. 58, 816

pustulata, syn.....M. N. 58, 816

pustulosa..M. N. 57, 834, fig. 1393

reticulata.....M. N. 57, 838

rubra.....M. N. 57, 836

saccharina.....M. N. 57, 837, fig. 1397, 1398

Sprucei....M. N. 57, 833, fig. 1391

Staudtii....M. N. 46, 645, fig. 920; Let. 66, 647

subcaerulea, syn.....M. N. 58, 816

testudinella.....M. N. 57, 835

Thwaitesii..M. N. 57, 834, fig. 1392

Tonkinensis. M. N. 57, 835, fig. 1394

Torrendii...M. N. 57, 838, fig. 1399

Mycodendron

paradoxum (bull).....Myths 9

Merulius

castaneus ...M. N. 56, 809, fig. 1259

Corium.....Let. 68, 703

cucullata, syn.....M. N. 58, 815

cuticularis, syn.....M. N. 58, 815

giganteus.....Cfr. Let. 67, 685

lacrymans..M. N. 44, 616, fig. 872; Let. 65, 539; Let. 69, 782

pallens....Let. 68, 703
pezizoideus, syn....M. N. 56, 803; M. N. 58, 817
pseudo-lacrymans. Cfr. Let. 67, 685
similis....Let. 67, 685; Let. 69, 789

Poria
Andersonii, syn....Let. 66, 592
Archeri....Let. 69, 802
cylindrispora....Let. 65, 538
fimbriata....M. N. 52, 740, fig. 1108, 1109
fulvo-umbrina, syn...Let. 63, 489; Let. 69, 798
sinuosa....M. N. 45, 626
subiculosa...M. N. 45, 630, fig. 895
subsinuosa, syn....Let. 62, 451
Weirii....Let. 62, 436 (error as to locality); Let. 65, 505
xanthospora....Let. 66, 592; Let. 69, 760
xylina....M. N. 45, 630, fig. 895

Perothelium
fimbriatum....M. N. 52, 740
Friesii, syn....M. N. 52, 740
hydnoideum (frustule), M. N. 52, 740
lacerum, syn....M. N. 52, 740
papillatum, syn....M. N. 52, 740
pezizoides, syn....M. N. 52, 740
reviviscens....Cfr. M. N. 52, 740
rugosum (bull)....M. N. 52, 740
Stevensonii (bull)..M. N. 52, 740; M. N. 52, 741
variabile (bull)....M. N. 52, 740

Ptychogaster
Japonicus....M. N. 48, 681
lucidus....M. N. 49, 699, fig. 1046

Strobilomyces
pallescens...M. N. 47, 663, fig. 952

Trametes
albida, syn....M. N. 59, 850; Let. 62, 423
albotexta...M. N. 44, 614, fig. 868
argyropotamica....M. N. 54, 772, fig. 1161, 1162
aspera....Let. 63, 462
avellanea....Cfr. Let. 68, 736
badia....Let. 63, 462
carnea....Let. 62, 435
cervina....Let. 67, 693
cilicioides, syn....M. N. 50, 703
cingulata (Fr. not Berk.) syn., M. N. 51, 724
cingulata. Let. 69, 784; Let. 69, 791
cornea, syn....M. N. 51, 723
Dickinsii....Let. 65, 521
Epilobii, syn....M. N. 59, 851
epitephra ...M. N. 59, 856, fig. 1434
Eucalypti, syn....M. N. 48, 684
Feei....M. N. 48, 684
flavescens, syn....Let. 65, 507
floccosa....Let. 67, 664
fuscella....Let. 63, 462
glaberrima, syn....Let. 63, 460
hydnoides....Let. 66, 632; M. N. 44, 612
heteromorpha....M. N. 59, 848, fig. 1415; Let. 62, 451
heteropora....Let. 63, 462
hexagoniformis, syn M. N. 59, 848; Let. 62, 451
hispidula....Let. 68, 749
hololeuca, syn....Let. 63, 460
hystrix....M. N. 44, 612
Krekei....Let. 69, 780
incana, syn....Let. 63, 460
incondita....Let. 68, 751; cfr. M. N. 50, 710
Japonica....Let. 68, 751; cfr. M. N. 59, 854
lacerata, syn....M. N. 43, 604; fig. 854; M. N. 59, 850; Let. 68, 720
lactea....Let. 62, 437; Let. 63, 460
lactinea...Let. 67, 665; Let. 63, 460
levis, syn....Let. 63, 460
lilacino-gilvus....M. N. 48, 683
malicola....Let. 65, 507
Meyenii....Let. 67, 669
micans, syn....Let. 69, 815
minima....M. N. 59, 850, fig. 1421
mollis, syn....Let. 63, 501; Let. 67, 693
Morganii....Let. 69, 815
Moritziana, syn....Let. 63, 460
nubila....Let. 69, 791
obstinata, syn....Let. 67, 669
ocellata....M. N. 44, 612, fig. 866
ochrolignea....Let. 63, 456
pergamena....Let. 65, 536
Persoonii....Cfr. Let. 65, 523; Let. 66, 598
pertusus, syn....M. N. 58, 827
piceina....Let. 65, 535
picta....Let. 69, 784
populina, syn....M. N. 42, 581
praetervisa....Let. 65, 561
purpurea....Let. 65, 531
pusilla....M. N. 54, 774, fig. 1165
pyrrhocreas....M. N. 44, 613
rufescens....Let. 69, 814
semitosta....Let. 68, 736
sensitiva ...M. N. 50, 710, fig. 1062; Let. 68, 751
sepium....M. N. 59, 850, fig. 1420; Let. 62, 423
serpens....M. N. 59, 851, fig. 1422, 1423, 1424; Let. 66, 603
Stephensii, syn....M. N. 59, 851
stereoides, syn....M. N. 53, 761; Let. 67, 693
Stowardii, syn....M. N. 48, 683, fig. 1022
straminea....Let. 69, 786
strigata....Let. 63, 462
suaveolens....Let. 66, 598

subflava .....Let. 66, 585
subsinuosa, syn.....M. N. 59, 848
Sycomori .....Let. 63, 460
trabea .....M. N. 52, 748, fig. 1122; Let. 62, 424
truncatospora .....M. N. 59, 853
ungulata ...M. N. 53, 759, fig. 1138; Let. 65, 566
versatilis, syn.....M. N. 50, 703
versiformis .....Let. 66, 598
vitrea .....Let. 69, 810
vittata, syn.....Let. 65, 578
Zollingeriana, syn...M. N. 50, 704

HYDNACEAE.

Eichleriella
Kmetii, syn.....Rad. 11
Gleoradulum
hydnoideum, syn.....Rad. 9
Gramnothele
cineracea ....M. N. 42, 581, fig. 821
lineata .....M. N. 42, 581, fig. 820
mappa ...M. N. 42, 581, fig. 818 and 819
Grandinia
sudans .....M. N. 52, 741, fig. 1110, 1111
Hydnum
amicum .....Let. 63, 496
auriscalpium .....Let. 63, 497
australe .....Let. 69, 768
basiasperatum, syn...M. N. 56, 801
Blackfordae .....Let. 68, 716; Let. 69, 758
casearium, syn. .....Rad. 9
fimbriatum, syn.....M. N. 53, 753, fig. 1126, 1127
friabile .....Let. 65, 510
helvolum .....Let. 65, 529
Henningsii .....M. N. 43, 397
meruloides, syn.....M. N. 45, 625
olidum ...Let. 65, 524; Let. 66, 612
pulcherrimum .....Let. 65, 548; M. N. 57, 840, fig. 1402; Let. 69, 768
Rawakense .....Let. 65, 529
repandum .....Let. 62, 443
rufescens .....Let. 62, 443
septentrionale .....Let. 65, 548
Sprucei, syn.....M. N. 60, 865
sudans, syn.....M. N. 52, 741
Thelephorum, syn....M. N. 59, 859
Uleanum .....Let. 65, 562
vellereum, syn.....Let. 63, 496
villipes .....M. N. 56, 801, fig. 1243
violascens .....Let. 66, 617
Irpex
brevis, syn.....M. N. 45, 625
caespitosus ..M. N. 59, 852, fig. 1426
cingulatus ...M. N. 55, 795, fig. 1197
consors .....M. N. 45, 625, fig. 887
crassus, syn.....Let. 69, 769
cucullatus .....cfr. M. N. 59, 1426
decurrens, syn.....M. N. 45, 625
flavus, syn.....Let. 67, 680
iyoensis, syn.....M. N. 45, fig. 903; Let. 66, 619
lamelliformis .....M. N. 50, 716, fig. 1073
maximus, syn.....M. N. 51, 724
Noharae ....M. N. 50, 716, fig. 1074 (in error M. N. 43, 601, fig. 851)
Owensii .....M. N. 44, 616, fig. 873; Rad. 10, fig. 979 (as Radulum, Rad. 12)
pachylon .....Let. 69, 769
purpureus ...M. N. 50, 715, fig. 1072
saepiarius ...M. N. 48, 682, fig. 1019
subcoriaceus .....M. N. 54, 776, fig. 1169; Let. 69, 813
tabacinus .....Let. 66, 619
tabacinoides .....Let. 68, 712
Tanakae .....Let. 66, 613
vellereus ....M. N. 42, 582, fig. 823; M. N. 43, 598, fig. 844; M. N. 55, 791
versatilis ....M. N. 50, 712, fig. 1068
zonatus .....M. N. 43, 602, fig. 852; M. N. 55, 795
Kneiffia
gelatinosa, syn.....M. N. 59, 857
Lopharia
Javanicus, syn.....Rad. 3
lirellosum, syn.....Rad. 3
Mucronella
tenuipes .....M. N. 55, 789, fig. 1186, 1187
togoensis, syn.....M. N. 55, 790
Odontia
lateritia, syn.....Rad. 9
Radulum
(The synonyms given in our pamphlet, "The Genus Radulum," are not listed here.)
Ballouii .....Rad. 1
casearium .....Rad. 8, fig. 977
cuneatum ..Rad. 2, fig. 961; Rad. 12, fig. 984; Let. 62, 434
fagineum .....Rad. 8, fig. 976
hydnoideum .....Rad. 9, fig. 978
Kmetii .....Rad. 10. fig. 980
laetum .....Rad. 7, fig. 975
mirabile .....Rad. 3, fig. 964
molare .....Rad. 6, fig. 973
orbiculare .....Rad. 3, fig. 965
Owensii, syn.....Rad. 12
pallidum .....Rad. 2, fig. 963
quercinum .Rad. 6, fig. 970, 971, 972
spongiosum .....Rad. 2, fig. 962
tomentosum .....Rad. 7, fig. 974
Aleurodiscus (Thelephoraceae)
corneus .....M. N. 47, 656, fig. 935, 936 and 937 (as Cytidia)

THELEPHORACEAE.

vitellinus ....M. N. 52, 736, fig. 1102

Asterostroma
epigaeum ...M. N. 50, 709, fig. 1060

Cladoderris
australica, syn.....Let. 65, 541
dendritica .....Let. 65, 541
infundibuliformis .....Let. 66, 606
spongiosa .Let. 65, 541; Let. 63, 469
Thwaitesii ..M. N. 54, 774, fig. 1167

Coniophora
Matsuzawae .....Let. 68, 753

Craterellus
clavatus, syn.....M. N. 53, 762
dubius .....Let. 63, 494

Cyphella
fulvodisca ..M. N. 59, 856, fig. 1435, 1436 (in error as fuscodisca)
nabambissoensis .....Let. 67, 675
vitellina, syn.....M. N. 52, 736

Cristella
cristata, syn.....M. N. 52, 744

Cytidia
cornea, syn.....M. N. 47, 656

Exobasidium
mycetophila, syn.....M. N. 47, 662

Heterobasidium
chlorascens (bull).....Myths 15

Hymenochaete
medicum .....Let. 65, 542
Mougeotii .....Let. 68, 708
philippensis, syn.....Let. 65, 542

Phlebia
hydnoidea, syn.....Rad. 9
lateritia, syn.....Rad. 9
merismatoides .....Let. 63, 479
radiata .....Let. 68, 707
tremelloides, syn.....M. N. 59, 859

Sebacina
Amesii .....M. N. 42, 576, fig. 810; M. N. 53, 755, fig. 1130
dendroidea (bull) ....M. N. 42, 583
incrustans ..M. N. 52, 744, fig. 1115; Let. 68, 728
spongiosa ...M. N. 54, 779, fig. 1174

Septobasidium
Collation of species..M. N. 51, 721
pedicellatum .....M. N. 51, 720, fig. 1077

Stereum
albobadium .....Let. 66, 601
annosum ...Let. 68, 723; M. N. 696 (in error as frustulosum)
atropurpureum .....M. N. 50, 712, fig. 1067
Bolleanum .....Let. 66, 596
Bresadoleanum .....Let. 67, 681
caperatum .....Let. 63, 482; Let. 66, 606; Let. 65, 541
caperatum (bis), syn...Let. 63, 502
contrarium, syn.....M. N. 44, 619
corruge .....M. N. 58, 826, fig. 1382
crucibuliforme (bull) ....Myths 15
Curreyii (bull) .....Myths 15
cyathiforme (bull) .....Myths 14
deceptivum ..M. N. 55, 786, fig. 1180
elegans .....M. N. 43, 598, fig. 843; Let. 68, 732; M. N. 47, 660, fig. 946
fastidiosum ..M. N. 52, 743, fig. 1116
frustulosum (error)..M. N. 49, 696, fig. 1040
frustulosum .M. N. 49, 697, fig. 1041
illudens ....M. N. 55, 785, fig. 1178, 1179
insolitum ....M. N. 47, 665, fig. 956
Leichardtianum .....Let. 68, 742
lilacino-fuscum .....Let. 68, 715
lobatum ..Let. 62, 421; Let. 67, 692
liratum .....M. N. 53, 764, fig. 1148
membranaceum .....Let. 63, 478
Mougeotii .....Let. 68, 708
occidentale .....Let. 69. 778
percome .....Cfr. M. N. 58, 826
phoca .....M. N. 55, 786, fig. 1181
plicatum .....M. N. 56, 807, 1256
princeps .....Let. 69, 763
radiato-fissum .....M. N. 52, 746, fig. 1119
rufum (miss).....Rad. 11
semilugens .....Let. 63, 467
sepia .....Let. 68, 750
sendaiense, syn.....M. N. 48, 680, fig. 1015; Let. 68, 715
Sowerbyi ....M. N. 44, 618, fig. 875
spadiceum (juggle).....Let. 66, 639
spectabile ...M. N. 52, 745, fig. 1118
spiniferum, syn.....M. N. 55, 786
spongiaepes .M. N. 56, 807, fig. 1256
subpileatum .....Let. 66, 634
sulcatum ....M. N. 44, 619, fig. 878, 879
tenebrosum .....Let. 67, 692
Thozetii .....Let. 67, 697
tjibodensis, syn.....Let. 66, 634
turgidum .....Let. 63, 502
vellereum .....Let. 66, 584
venosum .....Let. 66, 639
zonarium ....M. N. 47, 664, fig. 955

Thelephora
actinaeformis, syn....M. N. 60, 869
Commersonii, syn.....M. N. 60, 868
congesta, syn.....M. N. 45, 624
fimbriata ....M. N. 52, 744, fig. 1117
flabellaris ....M. N. 45, 634, fig. 904
Japonica, syn. .....M. N. 43, 597, fig. 841; Let. 65, 530
myriomera ...M. N. 45, 629, fig. 893
padinaeformis, syn....M. N. 59, 859

papillosa .....Let. 65, 530
terrestris .....Let. 69, 770
trachodes, syn.....Let. 60, 869

Tremellodendron
candidum .....Let. 65, 547
merismatoides .....M. N. 60, 865

CLAVARIACEAE.

Clavaria
aurantio-cinnabarina.
Cfr. Let. 63, 452
laeta .....Let. 63, 452
merismatoides, syn...M. N. 60, 865
nigricans ...M. N. 51, 729, fig. 1093, 1094
tenax, syn.....M. N. 60, 865

Dendrocladium (as Lachnocladium)
Archeri .....M. N. 45, 624, fig. 885
congestum ...M. N. 45, 624, fig. 884
Guadeloupe .....M. N. 60, 870
hirsutum .....M. N. 60, 870
juruensis .....M. N. 60, 870

Lachnocladium
ambiginosum .....M. N. 58, 828
Archeri (syn.) .....M. N. 45, 624, fig. 884
brasiliense ..M. N. 58, 827, fig. 1384
congestum, syn.....M. N. 45, 624, fig. 885
himalayense, syn.....M. N. 55, 793; M. N. 60, 867
Kunzei, syn.....M. N. 45, 624
Mannii, syn.....M. N. 55, 793
samoense, syn.....M. N. 58, 828
taxiforme, syn.....M. N. 60, 866

Phaeopterula, syn.
juruensis, syn.....M. N. 60, 870

Physalacria
inflata .....M. N. 48, 682, fig. 1020
rugosa, syn. .....M. N. 48, 682

Pterula
(Genus)..M. N. 60, 863. Synonyms there given are not repeated here.
aciculaeformis .....M. N. 60, 868, fig. 1481
actinaeformis .....M. N. 60, 869, fig. 1485
aurantiaca, syn.....M. N. 60, 869
Bresadoleana .....M. N. 60, 868, fig. 1480
capillaris ....M. N. 60, 867, fig. 1477
Commersonii .....M. N. 60, 868, fig. 1482
densissima ..M. N. 60, 865, fig. 1469
dichotoma .....M. N. 60, 863
durissima .....M. N. 60, 865
exserta .....M. N. 60, 866, fig. 1475, 1476
fascicularis ..M. N. 60, 865, fig. 1470
fruticum ...M. N. 60, 867, fig. 1478; M. N. 58, 822, fig. 1373
Himalayensis .....M. N. 60, 867
hirsuta, syn. .....M. N. 60, 870
humilis, syn. .....M. N. 60, 866
importata, syn.....M. N. 60, 866
juruensis, syn.....M. N. 60, 870
Mannii .....M. N. 60, 867; M. N. 55, 793, fig. 1194
multifida .....M. N. 60, 863, fig. 1464, 1465
penicellata .....M. N. 60, 863, fig. 1466, 1467
pennata .....M. N. 60, 865, fig. 1471
plumosa ....M. N. 60, 864, fig. 1468
pungens .....M. N. 60, 866, fig. 1472
setosa .....M. N. 60, 865
simplex .....M. N. 60, 866, fig. 1473
Sprucei, syn. .....M. N. 60, 865
subsimplex, syn.....M. N. 60, 866
subulata, syn.....M. N. 60, 863, fig. 1463
taxiformis ...M. N. 60, 866, fig. 1474
tenuissima, syn.....M. N. 60, 866
togoensis, syn.....M. N. 60, 866
trachodes ....M. N. 60, 869, fig. 1484
tropica .....M. N. 60, 869, fig. 1483
Uleana .....M. N. 60, 867, fig. 1479
Winkleriana, syn.....M. N. 60, 866

TREMELLACEAE.

Auricularia
(Genus) .....M. N. 55, 783
auricula-Judae .....M. N. 55, 783, fig. 1175
auricularis .....Let. 66, 637 (as Hirneola)
brasiliensis .....M. N. 55, 785; Let. 66, 637
cornea .....Let. 69, 766
delicata ....M. N. 55, 784, fig. 1177; Let. 66, 595
Emini, syn.....Let. 65, 514
Hunterii ....M. N. 56, 808, fig. 1258
intestinalis .M. N. 50, 708, fig. 1058; M. N. 55, 785
lobata, syn. .....M. N. 60, 873
mesenterica .....M. N. 55, 785; M. N. 60, 873, fig. 1490
Moellerii ....M. N. 55, 784, fig. 1176
ornata .....M. N. 60, 872, fig. 1489
papyracea .....Let. 68, 752
polytricha .....M. N. 55, 783
reflexa .....Let. 67, 653
squamosa .....M. N. 55, 785; Let. 65, 514

Calocera
dubia .....Cfr. M. N. 52, 742
glossoides .....Cfr. M. N. 52, 741

Clavariopsis
hispanica, syn.....M. N. 60, 872

Dacryomyces
aurantia .....Let. 66, 618
deliquescens .....Let. 62, 442
digressus ....M. N. 44, 620, fig. 882; Let. 66, 635
hyalinus ....M. N. 58, 828, fig. 1385
pallidus .....M. N. 58, 825, fig. 1379
tostus, syn.....Let. 62, 442

Dacryomitra
depallens ...M. N. 56, 803, fig. 1248, 1249, 1250; M. N. 57, 840, fig. 1403, 1404
dubia.....M. N. 52, 742, fig. 1114; M. N. 58, 825, fig. 1381
glossoides .....M. N. 52, 741, fig. 1112, 1113

Dacryopsis
brasiliensis .....M. N. 60, 874, fig. 1493
nuda .....M. N. 57, 841, fig. 1406, 1407, 1408

Ductifera
Milleii .M. N. 50, 710, fig. 1063, 1064

Exidia
agaricina, syn.....M. N. 58, 816
candida ..M. N. 44, 620, fig. 880, 881
Janus ..M. N. 60, 873, fig. 1491, 1492
Japonica .....M. N. 43, 599, fig. 845, 846, 847
spiculosa .....M. N. 43, 599
Uvapassa ...M. N. 54, 774, fig. 1166
vitellina, syn.....M. N. 52, 737

Exiodopsis
alba, syn.....M. N. 45, 629

Guepinia
bicolor, syn.....M. N. 58, 825
biformis, syn.....M. N. 58, 825
elegans .....M. N. 58, 825, fig. 1378
helvelloidea, syn.....M. N. 60, 871
jurulensis, syn.....M. N. 58, 825
occidentale ...M. N. 43, 600, fig. 849
pezizaeformis .....M. N. 47, 658, fig. 940, 941, 942
spathularia .....Let. 63, 471

Heterochaete
gelatinosa ...M. N. 59, 857, fig. 1439

Hirneola, syn. (see Auricularia). M. N. 55, 784
vitellina, syn.....M. N. 52, 737

Hormomyces
aurantiaca ..M. N. 50, 712, fig. 1065
callorioides, syn.....M. N. 50, 712
fragiformis, syn.....M. N. 50, 712

Naematelia
encephala ..Let. 66, 641; Let. 68, 719
Japonica .....Let. 68, 719

Pseudohydnum
guepinoides .M. N. 59, 858, fig. 1440
Thelephorum, syn...M. N. 59, 858

Seismosarca
alba .....Let. 62, 431; M. N. 45, 629
hydrophora ..M. N. 45, 629, fig. 894; Let. 62, 431

Tremella
albida, syn.....M. N. 44, 620
candida .....M. N. 59, 851, fig. 1425
compacta ...M. N. 58, 825, fig. 1380
fimbriata .....Cfr. M. N. 55, 794
foliacea .....M. N. 55, 793
frondosa ....M. N. 55, 793, fig. 1195
fuciformis .....M. N. 55, 790, fig. 1188
fusca .....M. N. 48, 683, fig. 1021
glaira .....M. N. 60, 874
helvelloidea, syn.....M. N. 60, 871
hispanica ...M. N. 60, 872, fig. 1487
Janus, syn.....M. N. 60, 874
marmorata ..M. N. 53, 757, fig. 1133
mellea .....M. N. 58, 818, fig. 1364
"mycetophila" .....M. N. 47, 662, fig. 950
samoensis .....M. N. 60, 875, fig. 1495, 1496
sarcoides ...M. N. 60, 875, fig. 1494
undulata (juggle).....M. N. 48, 683
vesicaria ....M. N. 60, 871, fig. 1486

PHALLOIDS.

Anthurus
aseroeformis .....Let. 66, 590
MacOwanae, syn.....Let. 66, 590

Aseroe
rubra .....M. N. 45, 631, fig. 898

Calathiscus
sepia (bull).....Myths 9

Clathrus
Americanus, syn.....M. N. 42, 585
camerunensis .....M. N. 53, 754, fig. 1128
cancellatus ..M. N. 57, 839, fig. 1400
crispus .....M. N. 42, 585, fig. 827
pseudo-crispus, syn. ..M. N. 42, 585

Colus
hirudinosus ..M. N. 47, 664, fig. 953; M.N. 50, 705, fig. 1053

Dictybole
Texense (bull).....Myths 14

Lysurus
Beauvaisii, syn. .....Let. 66, 645
Gardneri ....M. N. 43, 594, fig. 835; M. N. 55, 792, fig. 1192

Mokusin ....M. N. 42, 586, fig. 828; M. N. 46, 647, fig. 924; Let. 66, 645; Let. 65, 544
sinensis .....M. N. 51, 718, fig. 1075, 1076; M. N. 53, 764

Mutinus
bambusinus ..M. N. 45, 629, fig. 892

Phallogaster
globosus ....M. N. 52, 739, fig. 1106

Phallus
indusiatus .....Let. 67, 668
rugulosus .....Let. 66, 644

Prctophallus
jamaicensis .....Cfr. M. N. 52, 739

Pseudocolus
fusiformis, syn.....M. N. 49, 690
Javanicus, syn.....M. N. 49, 690; M. N. 42, 586
Mauritianus .....M. N. 49, 689, fig. 1030
Rothae .....M. N. 42, 586, fig. 829; M. N. 48, 679, fig. 1012, 1013; M. N. 50, 704, fig. 1052.
rugulosus, syn. .....M. N. 49, 689; M. N. 42, 586

"PUFF BALLS."

Arachnion
(Genus) .....M. N. 46, 643
album .....M. N. 46, 644, fig. 917
bovista .....M. N. 46, 644
giganteum ...M. N. 46, 645, fig. 919
rufum .....M. N. 46, 644
Scleroderma .....M. N. 46, 644

Areolaria
strobilina, syn. .....M. N. 52, 736

Battarrea
arenicola (bull) .....Myths 15
phalloidea .....Let. 67, 649

Bovista
argillacea, syn.....Let. 67, 671
brunnea .....Let. 65, 367
cervina, syn.....Let. 67, 671
nigrescens .....Let. 66, 602; Cfr. Let. 63, 463
pila .....Let. 66, 602
"pusilla", syn.....Let. 67, 671
uruguayensis, syn.....Let. 67, 671

Bovistella
echinella .....M. N. 43, 603, fig. 853
oblongispora .....M. N. 45, 632, fig. 900
pusilla, syn. .....M. N. 43, 604

Calvatia
arctica, syn.....M. N. 46, 650
borealis, syn.....M. N. 46, 650
craniiformis .....Let. 68, 733; Let. 67, 698
crassa, syn.....Let. 68, 733
cretacea .....M. N. 46, 650, fig. 929; Let. 66, 633
Gardnerii, syn.....Let. 67, 698; Let. 68, 733
pachyderma .....Let. 65, 558; Let. 66, 614; Let. 62, 444
polygonia .....Let. 62, 444
sculpta ....Let. 66, 615; Let. 69, 775
sericella, syn.....Let. 68, 733
versispora .....Let. 68, 711

Catastoma
anomalum ...M. N. 44, 610, fig. 862; M. N. 45, 631
ater .....M. N. 53, 756, fig. 1131
Brandegeii .....Let. 65, 511
circumscissum .....Let. 67, 671
levisporum ..M. N. 59, 853, fig. 1428
magnum .....M. N. 45, 631, fig. 897
pedicellatum .....Let. 62, 433; Let. 63, 463
Zeyheri .....Let. 65, 519

Chlamydopus
clavatus, syn.....Let. 67, 655
Meyenianus .....Let. 67, 655

Diploderma
album .....Cfr. M. N. 46, 643
avellaneum ..M. N. 46, 641, fig. 913
castoreum (error for radicatum). M. N. 46, 642; Let. 65, 551
fumosum, syn.....M. N. 46, 643
glaucum, syn.....M. N. 46, 643
insolitum .....M. N. 46, 641, fig. 914
melasporum, syn.....M. N. 46, 643
pachythrix, syn. .....M. N. 46, 642
radicatum ...Let. 65, 551; M. N. 46, 642, fig. 916 (in error as castoreum)
sabulosum, syn.....M. N. 46, 642
suberosum .....Cfr. M. N. 46, 643
tuberosum, syn.....M. N. 46, 642
Ungerii, syn.....M. N. 46, 642

Durogaster
brunnea ....M. N. 58, 816, fig. 1359

Geaster
Clelandii ....M. N. 55, 794, fig. 1196
fimbriatus .....Let. 69, 771
pectinatus .....Let. 69, 800
saccatus .....Let. 69, 771
stipitatus ....M. N. 56, 801, fig. 1242
striatulus .....Cfr. M. N. 55, 795
tomentosus .....M. N. 58, 919, fig. 1363
trichifer ....M. N. 56, 804, fig. 1251

Gyrophragmium
Delilei .....Let. 65, 556

Lanopila
bicolor, syn.....Let. 66, 583
Wahlbergii .....Let. 66, 583

Lasiosphaera
Fenzlii ..... Let. 67, 684

Lycoperdon
albidum (error) ..... M. N. 42, 582; Let. 65, 549
albinum ..... M. N. 42, 582, fig. 822 (in error as albidum)
Bonordenii, syn..... Let. 69. 783
cepaeforme ..... M. N. 51, 730, fig. 1096, 1097
cretaceum, syn..... M. N. 46, 650
cruciatum .... M. N. 44, 610, fig. 863
djurense ..... Let. 66, 636
endotephrum, syn..... Let. 66. 636
piriforme ..... Let. 69, 783
pisiforme ... M. N. 55, 795, fig. 1198
pusillum ..... Cfr. M. N. 43, 604
sericella, syn. ..... Let. 68, 733
stellatum, syn. ..... M. N. 44, 610
Warneri, syn. ..... M. N. 44, 617

Mesophellia
(Genus) ..... M. N. 46, 639
arenaria ..... M. N. 46, 639, fig. 910
castanea ..... M. N. 46, 640, fig. 912
pachythrix ..... M. N. 46, 640
sabulosa ..... M. N. 46, 639, fig. 911
(synonyms) ..... M. N. 46, 640

Mitremyces
aeruginosus (bull)..... Let. 62, 427
fuscus ..... Let. 62, 427
luridus, syn..... Let. 62, 427
viridis (bull) ..... Let. 62, 427

Mycenastrum
corium ..... Let. 62, 441
fragile, syn..... Let. 65, 558

Paulia
resinacea ... M. N. 43, 595, fig. 838; Let 66, 626

Phellorina
strobilina ... M. N. 52, 735, fig. 1101

Podaxon
elatus, syn..... Let. 63, 473
loandensis ..... Let. 63, 473
mossamadensis ..... Let. 63, 473
strobilaceus (bull) ..... Myths 15; Let. 65, 556

Polyplocium
Californicum, syn..... Let. 65, 556
inquinans, syn..... Let. 65, 556

Sclerodermа
columnare .. M. N. 53, 759, fig. 1139
fragile, syn..... Let. 65, 558
laeve ..... Let. 63, 468
lanosum .... M. N. 53, 759, fig. 1141
nitidum ..... M. N. 53, 759, fig. 1140
sinnamariense ..... M. N. 54, 772, fig. 1160
strobilinum, syn..... M. N. 52, 736

Secotium
acuminatum ..... M. N. 44, 617, fig. 874
australe ..... M. N. 55, 788, fig. 1184
coarctatum ..... M. N. 55, 789
decipiens, syn..... Let. 65, 556
erythrocephalum ..... Let. 67, 648
pedunculatum ..... M. N. 55, 788, fig. 1183
russuloides ..... M. N. 55. 788
Szabolcsense, syn.... M. N. 44, 617
tenuipes ..... M. N. 55, 788
Texense, syn..... Let. 65, 556

Tylostoma
mammosum ..... Let. 63, 470; Let. 65, 518
maximum, syn..... Let. 67, 655
Meyenianum, syn..... Let. 67, 655
obesum ..... Let. 62, 446
simulans, syn..... Let. 65. 518

Xylopodium
ochroleucum, syn..... M. N. 52, 736

HYMENOGASTERS AND TUBERACEAE.

Elaphomyces
Japonica ..... M. N. 44, 609, fig. 861

Endogone
pulvinata ... M. N. 56, 800, fig. 1240
tuberculosa .. M. N. 56, 799. fig. 1239

Gauteria
monticola ..... Cfr. Let. 66, 588
morchelliformis ..... Let. 66, 588

Hymenogaster
Behrii ..... Let. 69, 779

Hysterangium
Phillipsii ..... M. N. 44, 611, fig. 865 (but probably an error)

Rhizopogon
maculatum ..... Let. 68, 725
rubescens ..... Let. 66, 600

Splanchonomyces
Behrii, syn. ..... Let. 69. 779

BIRD NEST FUNGI.

Cyathus
dasypus, syn. ..... Let. 67, 673
Earlei ..... Let. 62, 445
vernicosus ..... Let. 67, 673

Nidula
macrocarpa . M. N. 51, 731, fig. 1098

Thelebolus
sudans (bull) ..... M. N. 52, 741

DISCOMYCETES.

Apostemidium
Guernisaci .....Geog. 19, fig. 807
leptosporum .....Geog. 20

Bulgaria
sarcoides .....M. N. 60, 875

Coryne
sarcoides .....M. N. 60, 875

Cudonia
circinans .....Geog. 17, fig. 800
convoluta ...Geog. 18, fig. 803, 804, 805; Let. 63, 504
Japonica .....Geog. 17, fig. 801; Let. 65, 620
lutea .....Geog. 17
ochroleuca .....Geog. 17
orientalis ....Geog. 18; Let. 63, 504

Cyttaria
(Genus) .....M. N. 48, 671
Berterii, syn.....M. N. 48, 671
Berteroi .....M. N. 48, 671
Darwinii .....M. N. 48, 671, fig. 992, 993
disciformis, syn. .....M. N. 48, 674
Espinosae ...M. N. 48, 673, fig. 995; Let. 66, 628
Gunnii .....M. N. 48, 672, fig. 994; M. N. 42, 578, fig. 814 M. N. 53, 764
Hariotii .....M. N. 48, 673
Hookeri ..M. N. 48, 674, fig. 996, 997
Purdiei, syn.....M. N. 48, 674
Reichei, syn.....M. N. 48, 674

Geoglossaceae. The synonyms listed in the pamphlet are not re-listed here.

Geoglossum
affine .....Geog. 9
alveolatum .....Geog. 11
arenarium .....Geog. 8
atropurpureum .....Geog. 8
Barlaea .....Geog. 10
capitatum .....Geog. 12, fig. 794
cohaerens .....Geog. 11
difforme .....Geog. 9, fig. 790
elegans .....Geog. 7
Farlowii .....Geog. 13
fumosum .....Geog. 7
glabrum .....Geog. 10, fig. 791
glutinosum .....Geog. 9
hirsutum .....Geog. 12, fig. 793; M. N. 49, 700, fig. 1047
intermedium .....Geog. 11
irregulare .....Geog. 6, fig. 787
longisporum .....Geog. 7
luteum .....Geog. 6, fig. 788, 789
nigritum .....Geog. 10
oblivaceum .....Geog. 8
paludosum .....Geog. 11, fig. 792
pygmaeum .....Geog. 11
robustum .....Geog. 8
velutipes .....Geog. 12
viride .....Geog. 8
viscosum .....Geog. 9
Walteri .....Geog. 13; Let. 68, 702

Helvella
Ephippium .....Cfr. Let. 65, 525
Fargesii .....Let. 65, 525

Leotia
atrovirens .....Geog. 16, fig. 799
chlorocephala .....Geog. 16
Japonica .....Let. 65, 543
lubrica .....Geog. 15, fig. 798
marcida .....Geog. 15

Mitrula
cucullata .....Geog. 15, fig. 797
gracilis .....Geog. 15
paludosa .....Geog. 14, fig. 796

Morchella
angusticeps .....Let. 63, 475

Peziza
cerea .....M. N. 44, 611, fig. 864

Phillipsia
polyporoides .....Let. 62, 432

Rhizina
inflata (juggle) .....Let. 69, 805
rhytidia, syn.....M. N. 49, 695
undulata .....Let. 69, 805

Rickella
transiens ...M. N. 56, 800, fig. 1241

Sarcosphaeria
coronaria ...M. N. 56, 806, fig. 1255

Spathularia
flavida .....Geog. 13, fig. 795
rufa .....Geog. 13

Trichoscypha
Hindsii ....M. N. 59, 847, fig. 1413; Let. 67, 679
instititia ....M. N. 59, 847, fig. 1413
tricholoma ..M. N. 59, 848, fig. 1414

Urnula
campylospora .....M. N. 49, 695, fig. 1037

Vibrissea
foliorum .....Geog. 19
truncorum .....Geog. 19, fig. 806

HYPOCREACEAE.

Cordyceps
Aphrophorae, syn.....Let. 69, 809
capitata .....M. N. 44, 608, fig. 855; M. N. 42, 576
capitata var. canadensis (error) M. N. 44, 609, fig. 860 (see Japonica)
cinerea, syn. .....Let. 66, 629

clavulata .....M. N. 43, 593, fig. 833. 834
coccigena .....Cfr. M. N. 43, 593
Cockerelli, syn. .....M. N. 43, 491
Doveii .....M. N. 49, 691, fig. 1034
entomorrhiza .....Let. 66, 629
Hawkesii, syn.....M. N. 49, 691, fig. 1033
isarioides, syn. .....M. N. 43, 592
Lloydii .....M. N. 59, 856, fig. 1437
locustiphila, syn.....M. N. 43, 592
Moelleri, syn. .....M. N. 43, 592
nutans .....M. N. 44, 607
ophioglossoides .....M. N. 44, 609, fig. 856, 857; Let. 66, 611
ophioglossoides (error for Japonica) .....M. N. 56, 809
pachybasis, syn.....M N. 43. 593
pistillariaeformis, syn., M. N. 43, 593
Robertsii. Let. 65, 522; M. N. 49, 692
sinensis .....M. N. 54, 766, fig. 1149
sobolifera ...M. N. 42, 584, fig. 826: M. N. 42. 575, fig. 808; Let. 67, 650 M. N. 44, 607
Sphaeocephala .....Let. 63, 485; Let. 66, 629
Sphingum .....M. N. 43, 590, fig. 830, 831
tarapotensis .....M. N. 43, 592
Tricentri. M. N. 44, 607; Let. 69, 809
Uleana, syn.....M. N. 43, 592

Hypocrea
citrina ....Let. 63, 454; Let. 66, 589
sulphurea .....Let. 66, 589

Isaria
Barberi, syn. .....Let. 63, 487
Buntingii ....M. N. 44, 615, fig. 871
cosmopaltriae ..M. N. 56, 806, 1254
Japonica ....M. N. 50, 707, fig. 1057
(on Melolontha) ....M. N. 47, 660, fig. 945
Mokanshawii .....M. N. 59, 854, fig. 1430
Ritchiei .....M. N. 59, 855, fig. 1432
sphecocephala .....M. N. 54, 778, fig. 1173

Ophionectria
Cockerellii, syn.....M. N. 43, 591
Cordyceps ..M. N. 49, 692, fig. 1035

Podocrea
cornu-damae .....M. N. 56, 810, fig. 1261; M. N. 57, 844
Xylarioides ..M. N. 57, 844, fig. 1412

PYRENOMYCETES.

Camillea
Africana, syn. .....Pyr. 26
bacillum .....Pyr. 3, fig. 827
bomba ....Pyr. 8, fig. 844, 845, 846; M. N. 54, 778, fig. 1172
cyclops .....Pyr. 4, fig. 834
globosa .....Pyr. 8, fig. 847
labellum .....Pyr. 4, fig. 829
Leprieurii .....Pyr. 3, fig. 826
mucronata .....Pyr. 3, fig. 828
poculiformis .....Pyr. 9, fig. 848
Sagraena ..Pyr. 7, fig. 838, 839, 840, 841; Let. 69, 808
sulcata .....M. N. 54, 771, fig. 1159
surinamensis, syn.....Pyr. 7
turbinata .....Pyr. 4, fig. 830, 831, 832, 833

Carnostroma
Thyrsus .....Pyr. 27, fig. 1461, 1462

Colletomanginia
paradoxa, syn.....Pyr. 15

Corynelia
poculiformis, syn.....Pyr. 10

Daldinia
albozonata .....Pyr. 25, fig. 1456; M. N. 58, 822, fig. 1374
angolensis .....Pyr. 26, fig. 1457; M. N. 49, 688, fig. 1028, 1029
argentinensis, syn. .....Pyr. 26
aspera, syn....Pyr. 26; M. N. 42, 579
asphaltum, syn. .....Pyr. 24
Bakeri .....Pyr. 25
barbata, syn.....Pyr. 26
caldarium .....Cfr. Pyr. 24
californica ..Pyr. 24, fig. 1452, 1453
cingulata, syn. .....Pyr. 25; M. N. 43, 604
clavata .....Pyr. 26
cognata, syn. .....Pyr. 25
concentrica ..Pyr. 23, fig. 1450, 1451
confluens .....Pyr. 25
corrugata .....Pyr. 25, fig. 1454
durissima, syn. .....Pyr. 24; M. N. 43, 604
Eschscholtzia, syn.....Pyr. 24
Gollani, syn.....Pyr. 24
granulosa .....Cfr. Pyr. 26
intermedia .....Pyr. 25
loculata, syn.....Pyr. 24; M. N. 43, 604
microspora (as var. vernicosa) syn. .....Pyr. 25
platensis .....Cfr. Pyr. 24
stratosa, syn.....Pyr. 24
Thouarsiana, syn.....Pyr. 26
vernicosa .....Pyr. 25, fig. 1455: M. N. 43, 604
vernicosa (bis.), syn.....Pyr. 26

Engleromyces
Goetzei .....Pyr. 15, fig. 856, 857

Glaziella
splendens .....Pyr. 29, fig. 1459
vesiculosa, syn. .....Pyr. 29; Cfr. Pyr. 30

"Glaziella"
aurantiaca .....Pyr. 30, fig. 1460

Henningsinia
durissima, syn. .....Pyr. 4

Hypoxylon
angolense, syn.....Pyr. 26; M. N. 49, 688
atropunctatum .....Let. 62, 426
bomba, syn. .....Pyr. 8
cerebrinum ...M. N. 42, 579, fig. 815
compuncta, syn. .....Pyr. 29
herculeum, syn. .....M. N. 42, 579
macromphalum .....Cfr. Pyr. 6
melanaspis .....Cfr. Pyr. 3
micropus .....Cfr. Pyr. 22
poculiformis, syn. .....Pyr. 10
sulcatum, syn. .....M. N. 54. 771
turbinatum, syn. .....Pyr. 4
viride .....Let. 68, 717

Isaria
byssoidea ...M. N. 53, 757, fig. 1132
flabelliformis ....Xyl. 12, fig. 1225; Xyl. 32; Let. 65, 506; M. N. 45, 635, fig. 905

Kretzschmaria
aggregata .....Cfr. Pyr. 23
angolensis, syn. ..Pyr. 23; Pyr. 26; M. N. 49, 688
Berkeleyana .....Cfr. Pyr. 20
bulgarioides .....Cfr. Pyr. 20
caenopus .....Pyr. 20, fig. 1445
cetrarioides .....Pyr. 21, fig. 1446
clavus .....Pyr. 20, fig. 1444
Colensoi .....Cfr. Pyr. 23
confusa .....Cfr. Pyr. 20
congestum .....Cfr. Pyr. 23
contracta .....Cfr. Pyr. 23
divergens .....Cfr. Pyr. 20
gomphoidea .....Cfr. Pyr. 22
guaranitica .....Cfr. Pyr. 23
heliscus .....Pyr. 22, fig. 1449
Kurziana ..Cfr. Pyr. 21 (but error)
lichenoides .....Pyr. 21, fig. 1447
lichenoides (bis).....Cfr. Pyr. 23
mauritanica .....Cfr. Pyr. 20
microcephala .....Cfr. Pyr. 22
micropus .....Cfr. Pyr. 23
novo-guineensis, syn.....Pyr. 20
paradoxa .....Pyr. 22, fig. 1448
proxima .....Cfr. Pyr. 21
Puiggarii .....Cfr. Pyr. 20
pusilla .....Cfr. Pyr. 22 (error)
rugosa .....Cfr. Pyr. 20 (error)
scruposa .....Cfr. Pyr. 22
sessilis .....Cfr. Pyr. 22
truncata ...Cfr. Pyr. 22 (but error)
Xylarioides .....Cfr. Pyr. 22

Nummularia
cinerea, syn.....Let. 62, 426

Leveilleana
(Genus), syn.....Pyr. 7

Penzigia
compuncta, syn.....Pyr. 29
obovata, syn.....Pyr. 26
Polyporus, syn.....Let. 69, 774
Ridleyi .....Cfr. Pyr. 26

Phylacria
globosa, syn. .....Pyr. 8
poculiformis, syn. .....Pyr. 10

Porodiscus
Rickii .....M. N. 58, 819, fig. 1366 to 1370

Poronia
agariciformis ... Xyl. 14, fig. 1231

Pyrenopolyporus
Hunteri .....M. N. 50, 706, fig. 1054, 1055; Let. 69, 774

Rhizomorpha
(Genus), syn.....Pyr 14

Sarcoxylon
aurantiacum, syn....Pyr. 29 (error)
compunctum .....Pyr. 28, fig. 1458
Le Rati.....Pyr. 29; M. N. 47, 668, fig. 960

Sphaeria
caelata .....Cfr. Pyr. 4
compuncta, syn. .....Pyr. 29

Thamnomyces
camerunensis .....Pyr. 11, fig. 850 (in error as Chamissonis)
Chamissonis (error for camerunensis) .....Pyr. 11, fig. 850
chordalis .....Pyr. 12, fig. 851
fuciformis .....Pyr. 12, fig. 852
rostratus, syn. .....Pyr. 12

Xylaria
acuminata (var. polymorpha) Cfr. Xyl. 24
adnata .....Cfr. Pyr. 14
adscendens .....Cfr. Xyl. 26
albomaculata .....M. N. 51, 725, fig. 1081
allantoidea .....Xyl. 6, fig. 1207
anisopleura .Xyl. 24, fig. 1338, 1339; M. N. 45, 636 (in error as Schweinitzii)
annulata .....Cfr. Pyr. 14
annulipes .....Pyr. 14, fig. 14
Apeiba .....Cfr. Xyl. 26
apiculata ....Xyl. 20, fig. 1331, 1334; M. N. 48, 676, fig. 1003, 1004, 1005, 1006
arbuscula ...Xyl. 21, fig. 1332, 1333
argentinensis .....Cfr. Xyl. 24
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The liberality with which my friends and correspondents have sent specimens for study has been the chief means of advancing my knowledge of the subject. It is only through an abundance of specimens from various localities that any subject can be learned. The numbers in the following list refer to the letters where detailed account of the specimens will be found.

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MYCOLOGICAL NOTES

And Other Publications Issued by C. G. Lloyd.

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C. G. LLOYD,
309 West Court Street.
Cincinnati, Ohio.

Vol. 1. Mycological Notes, Nos. 1-18, 1898-1904.
A compilation of the Volvae of the United States, 1898.
The Genera of Gastromycetes, 1902.
The Geastrae, 1902.
The Lycoperdaceae of Australia and New Zealand, 1905.
Notes on the Amanitas of the Southern Appalachians (by H. T. Beardslee), 1902.
Letters Nos. 1, 2, and 3, 1904.
Plates, 1-39.

Vol. 2. Index, Vol. 2.
Mycological Notes, Nos. 19-31, 1905-1908.
The Tylostomeae, 1906.
The Nidulariaceae, 1906.
The Phalloids of Australasia, 1907.
Letters Nos. 4-24, 1905-1908.
Plates Nos. 40-123.

Vol. 3. Index, Vol. 3.
Mycological Notes, Nos. 32-37, 1909-1911.
Mycological Notes, Old Species, Series No. 1, 1908.
Mycological Notes, Polyporoid Issue, Nos. 1-3, 1908-1910.
Synopsis of the Known Phalloids, 1909.
Synopsis of the Genus Hexagona, 1910.
Synopsis of the Section Microporus, Tabacinus and Funales of the Genus Polystictus, 1910.
Synopsis of the Section Ovinus of Polyporus, 1911.
Synopsis of the Stipitate Polyporoids, 1912.
Letters Nos. 25-38, 1909-1911.

Vol. 4. Index, Vol. 4.
Mycological Notes, 38-41, 1912-1916.
Synopsis of the Genus Cladoderris, 1913.
Synopsis of the Stipitate Stereums, 1913.
Synopsis of the Genus Fomes, 1915.
Synopsis of the Cordyceps of Australasia, 1915.
Synopsis of the Section Apus of the Genus Polyporus, 1915.
Letters 39-61, 1912-1916.

Vol. 5. Index, Vol. 5.
Mycological Notes, Nos. 42-60.
The Genus Radulum, May, 1917.
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Myths of Mycology, December, 1917.
Letters Nos. 62-69.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 42.

CINCINNATI, O. JUNE, 1916.

FRED. J. SEAVER.

UNIVERSITY OF CALIFORNIA
AT LOS ANGELES
JAN 2 0 1942

FRED. J. SEAVER.

We present on the front page a photograph of a rising young American mycologist, who gives promise of doing good work in connection with the subject. Mr. Seaver was graduated from Miami University, and his attention was first drawn to the fungus subject by Dr. Fink. His first work in connection with the subject was a publication on the Discomycetes of Iowa, in 1904, in the Bulletin from the Laboratories of Natural History, Iowa. The Discomycetes is a section of American mycology that has only been well worked up in part by Prof. Durand. The greater part of it is still in a chaotic condition. Mr. Seaver's work on the Iowa species is really the only good, systematic account we have, and his work only embraced a few species. In this paper, Mr. Seaver is to be commended for using the established names. Shortly before his paper appeared, an article on the same subject relating to the Cincinnati species was published by Morgan. It was one of Morgan's last papers. It was, from beginning to end, simply a name juggle. Unfortunately, during the latter years of his life Morgan seemed to have become infatuated with this method of seeking notoriety. Therefore, much to Mr. Seaver's credit, he did not in a single instance, in his Iowa work, follow this line. Mr. Seaver is specializing on the Discomycetes and is engaged, we understand, in reviewing the subject for the North American Flora. We hope he will be conservative in his work for his own sake and for American mycology.

ADDITIONAL NOTES ON CORDYCEPS.

I am particularly interested in Cordyceps. They are most curious plants, usually developed from the bodies of some insect, larva, or pupa. I trust any one who finds specimens will favor me by simply drying and sending them to my address. The host should always be dried and sent with the Cordyceps attached. If the species is small and several are found, I should like a liberal collection. The tropical species are very imperfectly known.

CORDYCEPS SOBOLIFERA (FIG. 808). FROM S. KAWAMURA, JAPAN.—We reproduce a photograph and interesting notes of the species furnished by Mr. Kawamura. We received nine specimens, all immature but one. The immature specimen shows mostly

Fig. 808.
Cordyceps sobolifera.

a cluster of clubs near the apex of the stem. In the one fertile specimen all the clubs are abortive except one. This raises the question if it is the same species as Cordyceps sobolifera, originally from the West Indies. Tulasne's account and picture, which are all that is known about the West Indian species, represent a simple club. But it appears from his remarks that the fertile club is borne in the same way as shown in Mr. Kawamura's photograph. The perithecia are prominent, but slightly imbedded (Fig. 809, x 6). The secondary spores are 2 x 8 linear, exactly as shown in Tulasne's figure (T. 1, fig. 33). We think the Japanese and West Indian species are the same, but we wish we could get some specimens that grow on the Cicadidae in the West Indies. Mr. Kawamura's account is as follows:

Fig. 809.

"Three days ago I sent you several specimens of Cordyceps sobolifera. This fungus occurs in summer in house grounds under persimmon or some other trees on which Cicadas like to sing. The fungus is not rare, but rather common through this country, as Cicadas outbreak very abundantly in Japan. In summer everywhere we go we find the Cicadas on trees singing noisily, and boys like to catch the male ones (they do not like the female one, for it does not sing at all) with long bamboo rods applied with bird's lime. I have

30 or more specimens of this fungus collected at several places. The photograph enclosed here is of dry specimens or specimens preserved in alcohol.

"Cordyceps nutans is the special product of Fukuoka prefecture in Japan."

See additional account of Cordyceps sobolifera on page 585.

CORDYCEPS CAPITATA IN JAPAN.—In our last issue we did not include this as a species recorded from Japan. We note a drawing of the plant (Figs. 11, 12, Plate 13) in Illustrations of Japanese Fungi, published by the Bureau of Forestry, and received since our article was written. The figure is evidently correctly named, though not as good as most of the figures of this excellent series. The color is too dark, the fresh plant is much more yellow, also the tuber (host) at base of the plant appears as though it were a part of the Cordyceps. They are quite distinct from each other, and do not merge as those in the figure.

RARE SPECIES OF FUNGI RECEIVED FROM CORRESPONDENTS.

SEBACINA AMESII (Fig. 810).—Pileus fleshy, pithy, tubercular or compressed globose, 3-5 cm. in diameter, about one cm. thick. Context white, 5-10 mm. thick, light and pithy, composed of loosely woven hyphae. Surface appressed tomentose with soft, agglutinate hairs, (Fig. 811 enlarged). Hymenium inferior, a thin, fleshy layer contrasting in texture with the pithy context (Fig. 812 enlarged), warm buff color, 40 to 100 mic. thick, with the numerous basidia imbedded at various depths. Basidia (Fig. 813) globose, 12-16 mic., pale with granular contents, and finally septate. Spores pyriform, 8 x 12 mic. hyaline, opaque, smooth with a lateral apiculus.

Fig. 813.

This characteristic and evidently very rare species departs from the genus Sebacina, as now considered, in not being resupinate, but having a thick, subglobose pileus. On this account it might well be made a new genus, but it is evidently so close to Sebacina in structure and so similar to the common species, Sebacina incrustans, in appearance, and particularly the hymenium, that I feel it is better to so class it and enlarge the limits of the genus.*

* My friend Professor McGinty does not take that view. He says if a "new genus" is not made now, it will be as soon as some parvenu learns that it has cruciate basidia, and is not resupinate, and he cites the history of the discovery of the genus Tremellodendron as a precedent. He proposes the name Atkinsonia for the genus to commemorate the discovery of Tremellodendron and the manner in which it was discovered. It will then become Atkinsonia Amesii, McGinty.

Sebacina Amesii is evidently a very rare species. We received it from Frank H. Ames, Brooklyn, N. Y. It does not occur in Prof. Burt's recent comprehensive accnont of the species with "longi-

Fig. 810.
Sebacina Amesii.

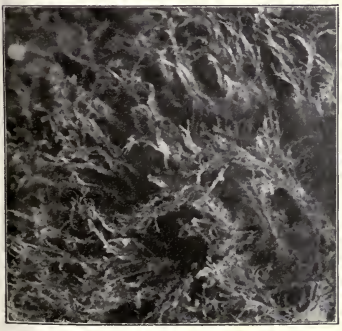

Fig. 811.
Hairs on surface (X 6).

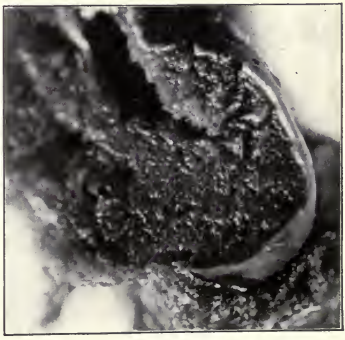

Fig. 812.
(Section X 6).

tudinally septate basidia" nor have I ever received it from any correspondent excepting Mr. Ames. Both Miss Wakefield, at Kew, and Rev. Bourdot, to whom I sent specimens, concur in the opinion that it should be classed as a Sebacina. Rev. Bourdot kindly prepared the figure (813) of the basidial structure.

In a recent letter, Mr. F. H. Ames gives an additional account of it. He states: "It grew in the grass on moss and presented a light, frothy appearance. The most of it was in an old road or path that had not been traveled for a long time and in rather thin, but moist woods. The weather was quite wet, or had been just previously. The color when fresh was white with a yellowish color in the hymenium. In drying it turned darker and took on a brownish hue. When fresh it had a very perceptible odor of slippery elm."

CYTTARIA GUNNII (FIG. 814), FROM R. G. ROBINSON, NEW ZEALAND.—The genus Cyttaria occurs only in the Southern Hemisphere. Originally it came from Terra del Fuego and Darwin gave an extended notice of it. It occurs abundantly and is used as

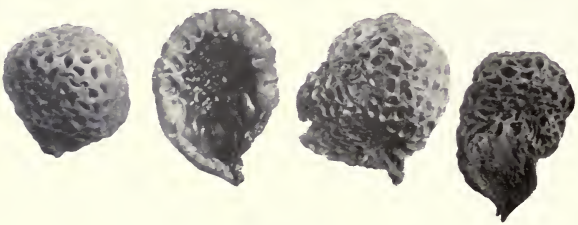

Fig. 814.
Cyttaria Gunnii.

food by the natives of that country, but I think those poor devils would eat most anything. It always grows on the branches of the native beech. Six species are named, five of them from South America. Cyttaria Gunnii is the only species in Australasia, and there I believe only in Tasmania and New Zealand. It grows on Nothofagus Menziesii. The South American species are solid and described mostly as deep yellow or orange. Cyttaria Gunnii is hollow and the dried specimen is white; slightly yellow when moistened. The spores are incorrectly given and figured in Cooke's account as ellipsoid. They are perfectly globose, measure 10-12 mic. smooth, hyaline, and are filled with granular matter. The base of the plant is smooth, and sterile, usually small, but in some specimens (as one photographed) the smooth portion is over one third the fruit. The honeycombed portion is the fertile portion, bearing the spores in asci lining the pores. The asci are soon absorbed and not found in the old specimens. This is the fourth collection I have of Cyttaria Gunnii, all from New Zealand.

Fig. 815.
Hypoxylon cerebrinum.

HYPOXYLON CEREBRINUM (FIG. 815), FROM J. B. HART, TRINIDAD.—We received this fine specimen from Mr. Hart many years ago, but at that time we had not worked at all on the large Pyrenomycetes. We sent it to Ellis, who advised us that it was a new species, and proposed the name Hypoxylon herculeum, but he never published it. It would have been a good name. The plant was named by Fée from Brazil many years ago, and it seems to me there must have been some transposition of the type, or the description in Saccardo. I have not seen the original publication. It is difficult to understand how he could have described it as "Stipes connate at the base," "Clubs with the apices dilated." The description as compiled in Saccardo must apply to Xylaria. However, his type is at Paris, broken in pieces, and it is undoubtedly this plant. There are also fragments at Kew (Fig. 816). As the name is quite applicable to it, and is definitely fixed by the type in the museum at Paris and Kew, there is nothing to do but continue it. Massee got a specimen from Trinidad, which he named Daldinia aspera. It never was a Daldinia, and as the original pieces of Fée's plant are at Kew, it should not have been renamed there.

Fig. 816.

The generic position is a question. The context is carbonous, not with concentric zones, hence not a Daldinia. The perithecia are peripherical, the spores elliptical, deep color (10 x 28-32), and in its structural features it is simply a giant Hypoxylon as classed by Cooke. It is stretching things to call a plant as large as this an Hypoxylon, but it is the best classification in my mind. I noted but two specimens in the museums of Europe, viz., the original that Fée named Sphaeria cerebrina, and the one from Trinidad, that was named Daldinia aspera. Mr. Hart's specimen sent me seems to be the third of what is evidently a very conspicuous but probably rare species.

POLYSTICTUS BIFORMIS (FIG. 817), FROM P. VAN DE BIJL, SOUTH AFRICA. A SMOOTH FORM.—This is a very common species in the United States, but our plant has usually appressed fibrils on the surface. As to pores, texture, color, spores, etc., it is

Fig. 817.
Polystictus biformis (smooth form).

exactly the same. With us it is a quite variable plant as to pores; often they are irpicoid, and I frequently receive it as an Irpex. Spores are 4 x 8-10 cylindrical, curved. Cystidia none. In Europe it is a very rare plant, and its connection with the American plant is not generally known, for when found it has been recorded under such

names as Trametes populina, Polyporus vulpinus (in error) and Daedalea Schulzeri. From Cuba it was called Polyporus pallidocervinus, changed to pallidofulvellus, a useless change, as the Cuban plant is the same as our common American plant. In Africa it appears rare, but this is the second collection I have, both smooth surface. I do not know that this smooth form has a name, nor do I feel that it should have a distinctive name.

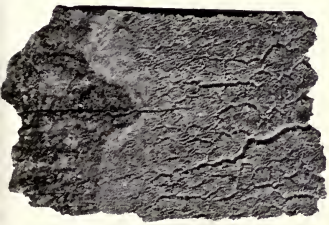

Fig. 818.
Gramnothele mappa.

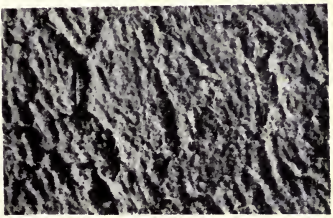

Fig. 819.
Same enlarged.

Fig. 820.
Gramnothele lineata.

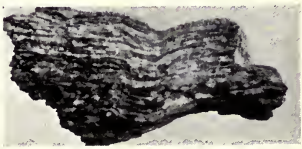

Fig. 821.
Gramnothele cineracea.

GRAMNOTHELE MAPPA, FROM P. VAN DE BIJL, SOUTH AFRICA.—This is an ambiguous, tropical genus, lying between Hydnaceae and Polyporaceae. It is classed in the former in Saccardo, but the hymenium is sometimes decidedly polyporoid, as in a species recently named from the Philippines (G. cineracea). The surface is covered with minute granules, visible to the eye. The genus was originally from Cuba and embraced four species (all probably the same), the different hymenial aspects being due probably to different positions of growth. I am not sure that the South African plant is the same as the Cuban. It should be compared under the microscope. But to the eye it is the same. On sec-

tioning the South African plant, clavate, hyaline bodies are seen, which I presume are basidia, also there are bodies of about the same size and shape, filled with colored contents, which I presume are gloeocystidia, but nothing that resembles the "emergences" figured by Patouillard, hence there is a doubt if the South African is the same as the Cuban species.

We present figures of authentic Gramnothele mappa (Fig. 818), and Gramnothele lineata (Fig. 820) from Cuba, also an enlarged figure of the hymenium of Gramnothele mappa (Fig. 819). We also present figure of Gramnothele cineracea (Fig. 821) (recently named from the Philippines), which is simply a granular Poria. The latter species, which is quite distinct from the Cuban plant, is peculiar in the way in which it affects the wood, as shown in our figure, the most notable character the plant has, but not mentioned in the original description.

LYCOPERDON ALBIDUM (FIG. 822), FROM JOHN A. STEVENSON, PORTO RICO.—I believe this is the first time I have gotten it, and the types at Kew are so poor I could tell but little from them, and they should never have been named. I am glad they were, however, for it gives us a name, and a quite suitable one, and from Mr. Stevenson's specimens we derive a clear idea of the characters of the plant.

Fig. 822.

Lycoperdon albidum grows gregariously on logs and has a strong, mycelial development, resembling very much unopened specimens of Geaster mirabilis. Peridium globose, white, about a cm. in diameter. Cortex furfuraceous. Gleba pale olive color. Sterile base none. Capillitium scanty, represented by a few hyaline hyphae. Spores very pale under the glass, globose or irregular, 4-5 mic. not apiculate, smooth. The surface of spores is uneven, but not tubercular. Lycoperdon albidum was named in mss. by Cooke from two imperfect specimens from Brazil. It was published in Massee's monograph, with a short description about as imperfect as the specimen. The two leading features of the plant are the abundant mycelial development and the almost entire absence of capillitium. I do not recall any other species with such scanty threads.

IRPEX VELLEREUS (FIG. 823), FROM P. VAN DE BIJL, SOUTH AFRICA.—This species is remarkable for the soft, spongy flesh, also characterized by dense encrusted metuloids on the hymenium. It was named from Ceylon, but I only have it from South Africa. The hymenium of this specimen is more polyporoid than irpicoid, and it would be better classed as Polystictus. However, it varies in this respect, and the previous specimens were not badly classed as Irpex.

Fig. 823.
Irpex vellereus.

SEBACINA DENDROIDEA.—I sent a specimen of this mysterious plant (cfr. Myc. Notes, p. 538) to Rev. Bourdot, and here present his interesting report. It will be noted that Rev. Bourdot suggests that it is not an autonomous species, but a "mycelial expansion" of the Fomes on which it is found. It is a new theory, and one that impresses me as having some basis.

"Votre Sebacina? ? dendroidea est bien curieux. Ce n'est pas un Sebacina sûrement! Je crois que c'est une *expansion mycéliale conidifère* du Ganoderma. Remarquez que les hyphes (Fig. 824) ont la même forme, la même ramification, et donnent les mêmes reactions, que les hyphes hyalines qui recouvrent la marge du Ganoderma applanatum, et tapissent l'intérieur des tubes. Le mode de formation das conidies sur ces filaments ne sont pas bien nets pour moi. Le point d'attache doit être trés fragile. Il y a de rares cas d'adhérence que j'ai cru observer. Il y a des points ou les extrémités de ces hyphes sont tellement serries et enchevêtreés, qu'on ne distingue plus rien; et c'est là précisément que les conidies du Ganoderma sont le plus abondantes.

Fig. 824.

Après Thelephora, Hymenochaete, Sebacina, c'est une nouvelle hypothèse: Ganoderma, que je vous soumets."—H. Bourdot.

A FUNGUS?—I received from H. L. Hammerstein, German East Africa, a curious thing (Fig. 825) that looks something like a dried phalloid, but I doubt if it is a fungus at all, although I can not suggest what it is. It forms a lattice work like a Clathrus, with granular surface. When soaked, the tissue is composed of these granules, loosely coherent, and easily crumbled under pressure. Mashed under the microscope, these granules are seen to be formed of thick, short, tubular hyphae, 12 mic. in diameter, with thick walls, and similar to the hyphae of a fungus. Adherent to the surface like the gleba of a phalloid, is a dark, amorphous substance that under the microscope is not resolved into any definite structure, and has nothing analogous to spores, basidia or asci. The thing is a mystery to me, and I publish a photograph hoping it may come to the notice of some one who is informed on the subject and can throw some light on it.

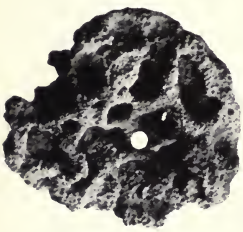

Fig. 825.

CORDYCEPS SOBOLIFERA (Fig. 826).—Since our article on the Japanese Cordyceps sobolifera (page 575) has been in type we were most agreeably gratified to receive from L. J. K. Brace, Bahamas, a fine specimen (Fig. 826) of this species from the West Indies, the original home. Cordyceps sobolifera was named (Clavaria sobolifera) and figured crudely by Watson in Philosophical Transactions in 1761. He called it "The Vegetable Fly," and to illustrate the crude ideas they had of the nature of Cordyceps in those early days we reproduce his remarks:—"The Vegetable Fly is found in the Island Dominica, and (excepting that it has no wings) resembles the drone, both in size and colour, more than any other English insect. In the month of May it buries itself in the earth and begins to vegetate. By the latter end of July the tree arrives at its full growth and resembles a coral branch, and is about three inches high, and bears several little pods which dropping off, become worms, and from thence flies, like the English caterpillar."

Fig. 826.

Cordyceps sobolifera is peculiar among the species of Cordyceps in its method of bearing fruit. Tulasne mentions it indefinitely, but his figure which was made from an imperfect specimen, does not show it. The fertile clubs are three, as shown in our figure, but usually only one, and generally deformed. The secondary spores are very narrow, about 1 x 8-12 mic. At the base of the fertile clubs bearing these ascus spores are a cluster of abortive processes. To the eye they are same texture and color as the fertile clubs, but the microscope shows that they bear only conidial spores. These are hyaline, narrowly elliptical, about 4 x 8 mic.

Recently Cordyceps sobolifera has been found in Japan (cfr. page 575) by S. Kawamura, and an abundant collection sent to me. The Japanese specimens were all, with one imperfect exception, immature, but in the photograph that Mr. Kawamura sends (Fig. 808) a perfect specimen is shown. The host, and microscopic details of the West Indian and Japanese plant are the same, and there can be no question of the identity of the species. The only difference I can note is that the West Indian is much darker color.

There were other references to the plant in old works of Natural History of West Indies all more than a hundred years ago. Since those old days Berkeley and Tulasne have both received specimens and given accounts and figures, Berkeley in 1845 and Tulasne in 1865. No specimens are now preserved in either of their herbariums, nor in any museums of Europe as far as I have found. The plant is usually abortive or deformed and there is much variation in the old crude cuts. There is no evidence that such a perfect specimen as Mr. Brace sends was ever before collected.

CLATHRUS CRISPUS (Fig. 827).—Two hundred years ago Plumier gave a crude figure of a phalloid which has been recognized as evidently the same as Clathrus crispus, which was finely, though it appears not accurately, figured by Turpin, Dictionaire des Sciences Naturelles, Atlas, plate 49, about 1820. This figure (cfr. Syn. Phalloids, (Fig. 76) is perfectly globose with large, isometric meshes. I have never seen any specimens corresponding to this figure. Father Schupp, from Brazil, sent me a photograph of a phalloid with same upper meshes, but the lower greatly elongated. This photograph was reproduced in Synopsis of Phalloids, Fig. 71, and called Clathrus Americanus. Mr. L. J. K. Brace has just sent me a dried specimen (Fig. 827) which has the meshes equal on one side and elongated on the other. There is no doubt it is the old, lost Clathrus crispus and it is also Clathrus Americanus. It also explains the Clathrus pseudo-crispus of the Phalloid pamphlet (Fig. 77). The truth in mycology is very elusive, but it finally filters out. Our best thanks are tendered to Mr. Brace for the specimen clearing up this subject.

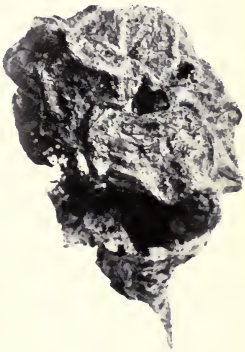

Fig. 827.

HELP! HELP!! HELP!!!

A general alarm has been sent out by the New York Botanical Gardens for four species of Agarics that mysteriously escaped having Murrill's name affixed in a recent issue of their publication. It was the intention to add the name Murrill to all 311 species, but by some slip four got away. A liberal reward will be paid to any one who will capture one of these mavericks and bring it back into the fold.

Fig. 828.

LYSURUS MOKUSIN IN THE UNITED STATES.—We present (figure 828) a photograph of this species dried, which was found growing in a greenhouse at Chico, California, by Mr. David Griffiths, and forwarded to us through the kindness of L. C. C. Krieger, of California. An imperfect figure of the plant was given in our Phalloid Synopsis (page 37). In this specimen (Fig. 828) the volva has broken circumscissally and the top carried up covering the arms. The home of Lysurus Mokusin is China and Japan. It is one of the first foreign phalloids known and was figured in 1774 by Father Cibot, a missionary in China. It was no doubt introduced into the greenhouse at Chico with foreign plants. Our best thanks are extended to Mr. Griffiths and Mr. Krieger for the specimen and record.

PSEUDOCOLUS ROTHAE.—We have from Prof. Yasuda, Japan, a drawing (Fig. 829) and description of this species as follows:—"The fungus is 4-6 cm. high. Three arms are joined at the apex, of reddish orange and obtusely triangular, wrinkled, porous-celled, 2.5-4 cm. long. Stipe light yellow, 7 mm. thick, sometimes not extending beyond the volva. Volva whitish 2 x 1.8 cm. with a long root. Spores long—elliptical, smooth, hyaline, 2 x 5 mic."

Fig. 829.

This answers well to the original description of Bailey (cfr. Phal. Australia, p. 20) also crude figure at Kew (cfr. Syn. Phal. Fig. 69). It is surely same plant as Pseudocolus Javanicus (Myc. Notes, page 456, Fig. 272), also probably the original from Java by Penzig (cfr. Syn. Phal. Fig. 66), although the figure is misleading in its reticulate surface, if that is the case. Also I think without question, it is same as Pseudocolus rugulosus (Syn. Phal., page 52, Fig. 67) based on an old figure from Java. It is probably the only species of Pseudocolus in the East.

POLYPORACEAE OF THE MIDDLE-WESTERN UNITED STATES.

BY L. O. OVERHOLTS.

It is extremely gratifying to me to be able to give strong approval to a work issued on mycology. It is an excellent work. It is the first comprehensive and reasonably accurate account that has been given of the subject. Mr. Overholts has selected his names, in most instances, I think, with good judgment, and practically all are of established usage. There are a few of his names that are, according to my ideas, not meritorious, but compared with the great bulk of the work, they are not worth quibbling over.

Mr. Overholts has abandoned the genus Polystictus and refers all species to

the genus Polyporus. In a work covering a restricted territory and with a limited number of species, this is practically the best and easiest thing to do. There are no distinct lines between Polyporus and Polystictus, and to call them all Polyporus is an easy way of avoiding several embarrassing species. The only logical ground on which Polystictus can be maintained is that Polyporus has a large bulk, and that any plan cutting it up to a reasonable extent helps it along, and Polystictus is well established by custom.

Mr. Overholts has introduced a new method of citing authorities that is new to me, and while I think it may be criticised and is cumbersome, it is much preferable to the old method that has been used. Thus, we read Fomes scutellatus, Schw. ex. Cooke, Fomes ohiensis, Berk. ex. Murrill, Fomes pini, Thore ex. Lloyd, etc. While I consider it is an immaterial detail, it is at least honest, and far less confusing than the way some of our English friends would cite the same things, namely, Fomes scutellatus, Cooke, Fomes ohiensis, Murrill, Fomes pini, Lloyd. It also looks better than the old method of putting the author's names in parenthesis and then adding the name of the man who puts it in a genus. Thus, Fomes scutellatus, (Schw.), Cooke. This is the usual way of citing, and it is objectionable, for it looks on the face of it as though Schweinitz was a side issue and Cooke was the main part. The whole system is in the process of decay, and I am glad to see the "ex." in Mr. Overholts' work, because it is a preliminary step to the *exit* of Mr. Cooke and others who have gotten so much dead-head advertising in this way. According to my opinion, the name Fomes scutellatus is all that need be cited regarding the name of the plant.

Mr. Overholts' method of name citing is also, in many instances, misleading to anyone who does not know the facts in the matter. Thus, "Polyporus rheades, Persoon, ex Fries" may look well and be according to form, but the truth is, Fries knew nothing about Polyporus rheades of Persoon, did not recognize it when he saw it, but discovered it as a "new species." What practical good there is therefore in citing Mr. Fries' name to Polyporus rheades even as "ex," I am unable to understand. I have no doubt Mr. Overholts is thoroughly conscientious in his citations, and probably thinks he has added something to the subject, but there is so much in his publication that is gratifying that it is not worth while debating over immaterial matters.

Very few works on mycology have ever been issued with as few errors as there are in this work of Overholts' (excepting the errors of his advertisements, which would be of no value if they were correct), and very few have ever been issued that will prove so practical and useful.

The publication forms one of the Washington University studies, and I believe is not on sale. The only unfortunate fact about it is that it is not published in book form, for I believe a work of such merit should be in considerable demand.

DISCREPANCIES IN MR. OVERHOLTS' PAPER.

We give above a notice of Mr. Overholts' latest work on Polyporus. As we state, we believe it is not only the best, but the only practical and sensible work published, and devoted to the American species. Most of the work, the descriptions, the microscopic details, was original with Mr. Overholts and was most excellently and accurately done. In his conception of the species and the names he uses he is in the main in accord with me. Of the hundred and thirty-two species considered, he takes one hundred and seventeen in the same sense that I do and uses exactly the same names that I do. It is quite evident that he has been a close student of my publications, and has followed me in the main. Of course, that is quite gratifying to me, particularly as in his first paper, under the influence of Prof. Fink, who did not know the first elements of the subject, he, after getting the most of his information from me, and from my museum, repudiated as a whole my idea of employing the established nomenclature. We itemize below the few (fifteen) instances where Mr. Overholts does not accord with me in the names used for the plants. All of them were well known to Mr. Overholts and most of them are simply questions of choice between two synonyms which is preferable to use. Mr. Overholts has done perfectly right to choose the one that appeals to him, and I believe the only way that nomenclature will finally reach stability is for authors to use this discretion and omit their advertisements. In a few instances I may change and follow Mr. Overholts, as in the case of Polyporus humilis for Polyporus frac-

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tipes, for it must be admitted it is a kind of nonsense to call a plant "fractipes" because the type specimen happened to have had its stipe broken. As Mr. Overholts does not in a single instance resort to that old, fraudulent argument, the chief stock in trade of all professional name jugglers, "the rights of priority," we are not disposed to quibble with him over minor differences of opinion. We itemize the few discrepancies for the benefit of those who are sending plants to us for identification, and who are fortunate enough to have Mr. Overholts' work for study and reference.

Polyporus Bartholomaei is velutinus.

Polyporus pennsylvanicus is pallidus as named by Peck and probably correct. It is much closer to squamulosus than to any other species.

Polyporus humilis is fractipes. Humilis is the best name, for fractipes was based on an accident.

Polyporus planellus is only a juggle for Polyporus planus. Romell claims it is stereoides of Europe. (Cfr. Note 358.)

Polyporus Lloydii is Polystictus Greyii.

Polyporus guttulatus is Polyporus alutaceus.

Polyporus fibrillosus is Polyporus aurantiacus.

Polyporus Tsugae is Polyporus lucidus. The original author (Murrill) thought it was not lucidus because he thought lucidus had pores in strata. That was only a bull. In the sense of Overholts it is the acerous wood form of lucidus, and I do not believe it can be distinguished without knowing the host.

Polyporus resinosus. I call this fuscus now for reasons stated many times in detail. Resinosus is much used, but is a very bad name for it.

Polyporus nidulans is Polyporus rutilans.

Fomes albogriseus is surely only young officinalis.

Fomes Ellisianus is for me same species as Fomes fraxinophilus on a different host.

"Fomes fulvus Scopoli ex Gillet" is a different plant from "Fomes fulvus Scopoli ex Fries," which is still a different plant from "Fomes fulvus Scopoli ex Marcucciana," which is still a different plant from "Fomes fulvus Scopoli ex Schaeffer," which is still a different plant, etc., etc., etc. I believe there are six different men who have passed on "Fomes fulvus Scopoli," each with a different plant, and I am forced to the conclusion that none of them really know much about what Scopoli did name. Why Mr. Gillet should be singled out as the wise one of the lot I do not know.

Fomes lobatus was based on a distortion. The author had no idea, however vague, concerning it as a species. Mr. Overholts takes it in the sense as pointed out by Morgan as a species, and Morgan was the first to formulate a specific idea in connection with it. I do not set myself up as a model of honesty, but I think there are few more dishonest things done than to take your ideas of a species from one man and your names from another who happened to stumble over a distortion.

Trametes rigida. I judge Overholts has the species right, but record of distribution is based on a different plant. I doubt if Trametes rigida occurs in either of the states mentioned.

Trametes Peckii. When Peck was groping around for names for the common things he found, he sent several specimens to Kalchbrenner, which are still preserved at Berlin. Kalchbrenner's determinations were only a joke. Thus he determined Fomes pini as Daedalea confragosa and others about the same way. He discovered that the common Trametes hispida was a "new species" which he called Trametes Peckii. Every one who has seen the specimen at Berlin, Bresadola, Murrill and myself, has referred it to Trametes hispida, but Mr. Overholts evidently considers we were all mistaken. I would not object to holding Trametes Peckii as the light colored form of Trametes hispida (corresponding to Daedalea ochracea as a color form of Daedalea unicolor), but it is a mistake to substitute it for Trametes hispida.

Lenzites vialis is Lenzites trabea in the sense of Orth and European mycology, whatever it may be in sense of Persoon.

Favolus rhipidium is called also Polyporus rhipidium and Gloeoporus rhipidium, and it is not very good as either. It is a poorer Favolus, however, than either of the other two. I observed it fresh in Florida last winter and concluded it would not be bad in the genus Gloeoporus if I thought that the genus Gloeoporus was worth maintaining. The entire plant when fresh is somewhat "waxy," but that is a different idea from Gloeoporus with fleshy context and gelatinous pores.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 43.

CINCINNATI, O. SEPTEMBER, 1916.

GEORGE E. MORRIS.

UNIVERSITY OF CALIFORNIA
AT LOS ANGELES
JAN 2 0 1942

GEORGE E. MORRIS.

On the first page of this pamphlet we present a photograph of the late George E. Morris, who on July 5th, died at his home at Waltham, Mass. For many years Mr. Morris was a leader in matters both botanical and mycological in the East, and probably no one had a better knowledge of the indigenous plants of his region in Massachusetts. He was a teacher of drawing and an artist of excellent abilities, as well as a botanist. These accomplishments enabled him during his lifetime to prepare colored drawings of the greater part of the flowering plants and agarics of his region. These drawings we have never seen, but are told that they are of excellent merit and very extensive as to number. We do not know what arrangements have been made for their preservation and use, but hope they will be preserved in connection with the mycological work at Harvard. It is quite likely that Dr. Farlow's splendid set of exsiccatae and drawings will be left to Harvard, and if Mr. Morris' drawings are also secured they will make a collection unequaled in any other institution.

Mr. Morris was 63 years of age at the time of his death. The photograph that we present was taken about fifteen years previous. He was one of my esteemed correspondents, and as fine a collector as ever placed specimens before me. I always looked forward to the receipt of a fine lot of rare specimens from him every year. On the date of his death, a full account of his life and works was given in the Daily Press and Tribune, of Waltham, Mass., which is preserved in the Lloyd Library.

CORRECTION.

FRED J. SEAVER.—In my article concerning Mr. Seaver in the last issue of Mycological Notes, I made an error which I take pleasure in correcting, as advised by Mr. Seaver.

"I graduated first from the Morning Side College, Iowa, later from the State University of Iowa, and began work in mycology under the direction of Professor Macbride. I never attended Miami University, and have never been a student of Dr. Fink's, although I have always been associated with him in an indirect way."

ADDITIONAL NOTES ON CORDYCEPS.

I am particularly interested in Cordyceps. They are most curious plants, usually developed from the bodies of some insect, larva, or pupa. I trust any one who finds specimens will favor me by simply drying and sending to my address. The host should always be dried and sent with the Cordyceps attached. If the species is small and several are found, I should like a liberal collection. The tropical species are very imperfectly known.

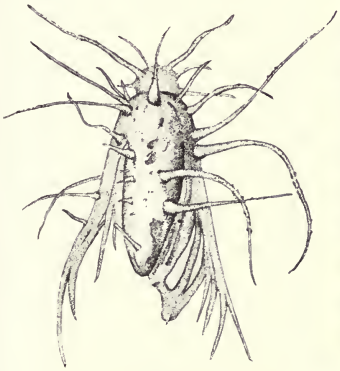


Fig. 830.

Fig. 831.

Cordyceps Sphingum. Fig. 830, from Tulasne. Fig. 831, clubs enlarged 6 times.

CORDYCEPS SPHINGUM (Figs. 830 and 831).—We have received for inspection, from Archibald H. Ritchie, Government Entomologist of Jamaica, a cotype specimen of what Ellis called, from the West Indies, Cordyceps Cockerellii (originally Ophionectria Cockerellii), and it proves to be typically the well-known Cordyceps Sphingum which was well illustrated by Tulasne. Schweinitz found a conidial growth on a sphinx moth which he named Isaria Sphingum. Tulasne found a Cordyceps on the same moth, on insects from West Indies, in the museum at Paris, and assuming that it was the perfect

form of Schweinitz' species, called it Torrubia Sphingum. Berkeley received specimens from Cuba of Tulasne's plant which he records as Cordyceps Sphingum, and had the nerve to write "B. & C." after it.

It seems not to be a rare species in the West Indies, and I only know it from southern United States. Ellis referred here a Cordyceps growing on a cocoon in New Jersey. I have not seen it, but as Ellis did not know Cordyceps Sphingum when he received it growing on the true host from the "type locality," he probably did not correctly determine it when he found something on a different host, and in a region from which no one else ever found the species. Cooke states that Cordyceps Sphingum has been found in Switzerland, but I do not know the source of this statement. We present a figure originally from Tulasne, showing the moth bearing the Cordyceps clubs. These are slender, quite numerous, and proceed from different portions of the body of the insect. The perithecia are superficial and scattered along the stroma. We also present a figure (831) of the separate clubs enlarged (x6). This photograph was made from the Cuban collection at Kew.

SYNONYMS.—As previously stated, Cordyceps Cockerellii (the cotype) is typically Cordyceps Sphingum. The type at New York has shorter clubs, merely a variation, on which was based the "species." Moeller gives a fine figure of Cordyceps Sphingum bearing the perithecia more collected near the middle of the stroma, under the name Cordyceps Moelleri, discovered by Hennings. There is a

Fig. 832.

strong suspicion in my mind that Cordyceps locustiphila, Cordyceps tarapotensis and Cordyceps Uleana, all Henning's discoveries from Brazil, although growing on the locust, are all variations of Cordyceps Sphingum.

When Massee wrote his article, he found in Berkeley's herbarium a specimen Fig. 832 (x6) of Cordyceps Sphingum with well developed contiguous perithecia, which Curtis had named (mss) Cordyceps isarioides. He proceeded to publish it with the usual bulls. The spores he describes as continuous, filiform. They are not continuous, but septate in the type, as all Cordyceps spores are, and as readily seen when stained with iodine. Then he described it as having "dense white mycelium that almost covers the host." The "mycelium" is the scales found on all "woolly" moths. A Cordyceps with the mycelium on the outside of the host would be quite a novelty, incompatible with the accepted idea of the way Cordyceps are developed.

CORDYCEPS CLAVULATA (Figs. 833 and 834).—Mr. Ritchie also submits specimens of the Black scale (Saissetia nigra) with imperfect clubs of a Cordyceps, no doubt undeveloped Cordyceps clavulata, the only species known to occur on a scale insect in America. The history of the species is as follows:

Schweinitz (1834) under the name Sphaeria clavulata described a plant growing on oak branches. No specimen exists in his herbarium, and although he took the dead host for the subiculum, the description can refer to nothing but this plant as no doubt correctly interpreted by Peck (1876). Peck found it growing on scale insects on Ash, and his specimens were distributed in de Thumen's exsicc. 1258, and Roumeguere, 4782. In the meantime Berkeley (1861) had found it in Britain on the Wych-elm growing on a "sclerotoid substance" which Cooke states is a female Coccus. Berkeley named

Fig. 833.

Fig. 834.

Cordyceps clavulata Fig. 833, the scale insect bearing the clubs. Fig. 834, same enlarged 6 diameters.

it Cordyceps pistillariaeformis and gave his usual scanty description, but a very good figure in Ann. & Mag., Plate 16 (1861). Cooke recognized Berkeley's specimen as the same as Peck's collection, but employed Berkeley's name. This is the only collection known from England. I did not find it at Kew, but Cooke states in his day it was preserved and labeled by Berkeley, Cordyceps pachybasis. In this country it has also been collected by Dearness in Canada, Seaver in North Dakota, but it is so small that it is rarely found. In Europe fine specimens have been recently collected in Austria on Lecanium and distributed (Wien, No. 1817). Our illustration (Fig. 833) is made from these collections. The best developed specimens we have noticed are in Peck's museum from which our enlargement (Fig. 834) was made. As our figures tell the whole story, there is no use describing it.

I believe there is but one other Cordyceps recorded on scale insects, viz., Cordyceps coccigena, which was beautifully illustrated

by Tulasne from a species of Coccus from New Guinea, 50 years ago. Nothing is known of it excepting Tulasne's account, and no material is in Tulasne's herbarium. The heads are globose, differing in shape from those of Cordyceps clavulata, but it may develop in time that they are variations of the same thing.

LYSURUS GARDNERI.

LYSURUS GARDNERI (Fig. 835).—We present herewith a sketch of Lysurus Gardneri, recently sent us by C. C. Brittlebank, Melbourne. In our Phalloid Synopsis, we presented nine species of Lysurus, and the evidence since is that four of them, viz., Lysurus Gardneri (Ceylon), Lysurus Australiensis (Australia), Lysurus borealis (United States) and Lysurus Clarazianus (Argentina) are all one and the same thing. We have believed it for a long time, and there was no longer any room for doubt on the appearance of "Notes on Australian Fungi No. 2," August, 1915, by Dr. Cleland and Edwin Cheel. We suspected it from the first, but Professor Petch maintained that Lysurus Gardneri had its arms joined by a membrane at the apices, which was not the case as far as known in the other species. Messrs. Cleland and Cheel have satisfactorily explained this. In Australia, while the arms are usually free, they are sometimes "united at the apex by a thin membrane which gives the specimen a somewhat clathrate appearance." The figure 836 which we reproduce from Messrs. Cleland and Cheel presents the top of a young specimen with two of the arms joined. Mr. Brittlebank's sketch (Fig. 835) shows the arms connivent, as they are at first. They afterwards spread out, as shown in the fine photograph by Hollis Webster, published in Mycological Notes, page 513.

Fig. 835.

Fig. 836.

There is a long story connected with the species. First it was sent Berkeley from Ceylon and named Lysurus Gardneri. It is rare

in Ceylon, but recently collected by Professor Petch. One collection reached Kew from Australia (Bailey, Brisbane River) which Cooke named Lysurus Australiensis, and gave in the Handbook a most inaccurate and exaggerated drawing of it. It seems to not be common in Australia, though there are twelve collections in the National Herbarium, Sydney. Fischer gives a very good figure of it from Argentina under the name Lysurus Clarazianus. The European and American history is all recent, for it is supposed to be introduced into both these countries. With us it was first collected at East Galway, New York, by Professor Burt in 1893. He published it as Anthurus borealis, under a misconception of the genus Anthurus. A few stations were added from time to time (cfr. Myc. Notes, pp. 183, 219 and 515), and of late years it is sometimes found in abundance. It seems to grow where sod has been turned and rotted. In Europe it has been collected once in Germany and twice in England (cfr. Syn. Phalloids, p. 40), no doubt adventitious. The native home of the species is probably the East (Ceylon and Australia). Cleland and Cheel consider that Mutinus pentagonus (Syn Phalloids, Fig. 28) is the same plant. I examined the specimens at Kew and I thought the arms were consolidated in one piece. If they separate, then I think it is Lysurus Mokusin of China, which differs from Lysurus Gardneri in having an angular, fluted stem. Petch in his latest work insisted that the Ceylonese plant and Australian are not the same.

RARE SPECIES OF FUNGI RECEIVED FROM CORRESPONDENTS.

PAXILLUS AUREUS, FROM J. B. CLELAND, AUSTRALIA (Fig. 837).—Resupinate, or rather pileate and dorsally adnate. Pileus with pale yellow context, and raised, pubescent margin. Gills strongly venose connection. Spores small, subhyaline, 1½-2 x 3-4.

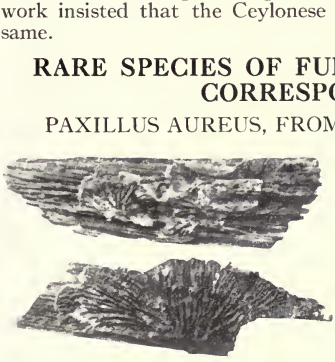


Fig. 837.

In its habits, appearance, color, context and spores this is so close to Merulius aureus, that there is a suspicion in my mind it is a hymenial variant of it, but no similar plant occurs in Europe. The gills are similar to those of Paxillus panuoides.

The old system of fungus classification on hymenial configuration is the best that can be devised, but it is not entirely natural. When we become familiar with them we often recognize very close relationships between plants of widely different genera.

PAULIA RESINACEA, FROM J. T. PAUL, AUSTRALIA (Figs. 838, 839 and 840).—Many curious fungi reach me, but nothing ever before as novel as this. I hardly know where to place it, though

I do not doubt it should be classed in the Gastromycetes. There is nothing similar in any respect.

Plant 4-5 cm. high, 2 cm. thick. Peridium brittle, resinous, bearing little grains of resinous substance like lac, apparently an exudation. Columella of pale tissue, reaching beyond the middle. Hymenial plates carbonous, black, closely packed, proceeding from the columella and terminating in brown apices, not reaching the

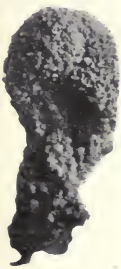


Fig. 838.

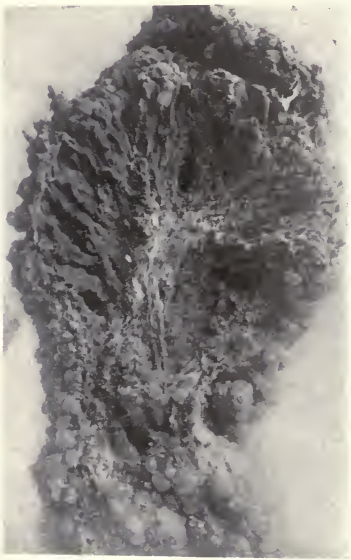


Fig. 839.

Fig. 840.

Paulia resinacea. Fig. 838, natural size. Fig. 839, section. Fig. 840, surface (enlarged).

peridium. Spores globose, 6 mic. pale brown color with minutely tubercular surface, are borne densely covering the carbonous plates.

It is difficult to suggest an analogy for this curious thing. There are no other genera of true Gastromycetes with carbonous plates. In the genera Gyrophragmium and Montagnites we have somewhat similar plates, but these genera do not have true peridia, and are in fact nearer to Agarics than to Gastromycetes. Nor do I know of any other fungus with such curious exudation. It looks like lac, but it is neither a true resin nor a gum, for it is soluble in neither boiling alcohol nor water. I have no information as to its habits, but hope Mr. Paul will advise me further in this respect.

THELEPHORA JAPONICA, FROM A. YASUDA, JAPAN (Fig. 841). — I think a good species, as named by Professor Yasuda. Close to Thelephora papillosa (Letter No. 54). Same hymenium and spores, the latter typically Thelephora spores. Differs in its dark, fibrillose surface, and apparently in its method of growth. These two species, both from Japan, are the only Thelephoras known to me with permanent, papillate hymenium.

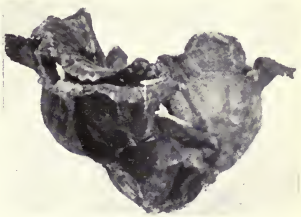


Fig. 841.

A CONIDIAL XYLARIA (?) (Fig. 842). — Some years ago we received from Dr. Mary Whetstone, Minnesota, a curious and evidently rare fungus that we have never been able to satisfactorily explain. It consisted of pale, woody, clavate bodies proceeding from a hard sclerotoid base. We assume that it is the earlier or conidial stage of some Xylaria, but no Xylaria is known in this country or Europe that is developed from a sclerotium. In the East there is a species Xylaria nigripes, that is produced from a sclerotium and usually (always, perhaps) found on the ant hills. Prof. Petch has published very full accounts of it. We do not give it a name, for we do not believe in naming things when one does not know what they are, but it is very curious, and we hope will come again to the notice of some of our correspondents. The sclerotium is very hard and the specimen has the appearance of having been split off from a larger mass.

Fig. 842.

HYDNUM HENNINGSII, FROM MISS A. V. DUTHIE, SOUTH AFRICA.—This is the first well-developed specimen of this species that has been collected. The original was resupinate with deformed tubercules. This is dimidiate, four inches in diameter, yellow when fresh and evidently conspicuous when growing. The flesh of the dried plant is bright, but pale yellow. The teeth well formed, but brown, contrasting with the yellow flesh. Spores are 4 x 6, elliptical, smooth, colored. Hydnums with colored spores are rare. None occur in Europe or the United States. But four are known to me, one from South America, one from China, this one from South Africa, and an unnamed species from Cuba that I saw in the museum at Paris. I have previously received Hydnum Henningsii from I. B. Pole Evans, Pretoria, South Africa, which, however, was resupinate.

Fig. 843.

STEREUM ELEGANS, FROM MRS. A. V. KIRKWOOD, AUSTRALIA (Fig. 843).—We have received from Mrs. Kirkwood, Australia, a fine specimen of this species (Fig. 843), with a long tap root. The species is frequent in warm countries, particularly in Australia. We have about 20 collections, but no other has this long root feature. We do not know that it is a constant character. Some collections appear to have had the root broken off, but others do not appear to have had it.

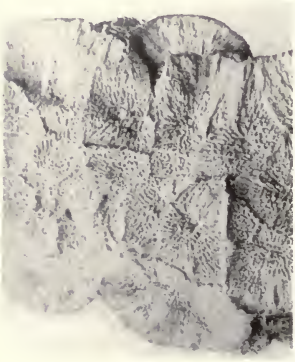


Fig. 844.

IRPEX VELLEREUS, FROM P. VAN DER BIJL, AFRICA (Fig. 844).—Young condition with the hymenium in radiate ridges, hence a Radulum in this state. We gave in Mycological Notes No. 42, a photograph of the developed plant. Notwithstanding the very different appearance of the hymenium, the context, surface, and all other features are exactly the same, and we can not question that it is a younger development of the same plant.

EXIDIA JAPONICA, FROM PROFESSOR A. YASUDA, JAPAN (Figs. 845, 846 and 847).—Gyrose, applanate. Color dark, almost black. When moist (Fig. 845) 2-3 mm. thick. When dry (Fig. 846), a thin, ridged membrane less than a mm. thick. Tissue

Fig. 845.

Fig. 846.

Exidia Japonica

Fig. 847.

hyaline with a few dark hyphae interposed, which are dense, forming a thin, dark surface layer. Surface densely covered with fasciculate bundles of projecting hyphae (papillae) which when moist are dark, but when dry are white. Basidia 7-8 x 8-10, cruciate, imbedded in the dark surface layer. Spores not found.

There are several species of Exidia with similar structure, viz., the common Exidia glandulosa, Exidia truncata and Exidia spiculosa (in the sense of Tulasne). The latter is not for me the same as Exidia glandulosa, as usually referred.

Exidia Japonica is close to Exidia glandulosa. It is more firm, dries in a thicker layer, the tissue is hyaline (colored in Exidia glandulosa), and it is the only species known to me with white papillae when dry. The papillae of other species are concolorous and are hardly noticeable on dried specimens. The structure of Exidia spiculosa was first correctly shown by Tulasne (1873). Our enlargement (Fig. 847) will show the dense, white papillae on which the species rests.

POLYSTICTUS (OR TRAMETES) CUNEATUS, FROM J. M. GRANT, WASHINGTON (Fig. 848).—I took the types at New York, as Mr. Grant suggests, to be same as Polystictus Sequoiae, but these are better specimens and show them to be quite different. This species has same surface, texture and similar pores to Trametes hispida, and should be classed together, though Trametes hispida is a better Polystictus than Trametes. The context is pure white, and at first I considered the probability of it being a white form of Trametes hispida. But I found the spores globose, 5-6 mic. transparent with a large, opaque gutta, with no suggestion of the cylindrical spores of Trametes hispida. I therefore consider (now) Polystictus cuneatus to be a good species, though the name has no application whatever to these specimens.

Fig. 848.

GUEPINIA OCCIDENTALIS, FROM J. M. GRANT, WASHINGTON (Fig. 849).—Color light yellow, pale lemon yellow when soaked. Obconic with a short stipe. Disc flat, 3 mm. Stipe short, merging into the cup. Externally glabrous, but under the glass surface of hyaline, palisade, inflated cells. Basidia forked, with yellow, guttulate contents. Spores subcylindrical, arctuate, 5-6 x 20 mic., septate when old, with granular, pale yellow contents.

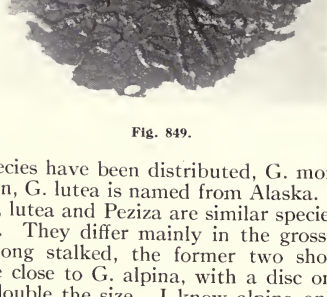


Fig. 849.

The genus Guepinia consists of stipitate, tremellaceous plants with forked basidia, and subcylindrical spores which are septate when old. It has the hymenium on one face only. We have in the eastern United States one common species, G. spathulata, one fairly common, G. elegans, one very rare, G. Peziza. From the West two species have been distributed, G. monticola and G. alpina. In addition, G. lutea is named from Alaska.

Guepinia occidentalis, alpina, lutea and Peziza are similar species, all yellow, and growing on pine. They differ mainly in the grosser features. The latter two are long stalked, the former two short stalked. G. occidentalis is quite close to G. alpina, with a disc one half as large and spores about double the size. I know alpina only

from description, and perhaps they are the same species. As all these yellow Guepinias on pine are rare plants, we are particularly glad to get this nice collection from Mr. Grant.

As to basidia and spores, Guepinia is same as Dacryomyces, and the reason this is not a Dacryomyces is that the hymenium covers one face only. Still the distinction in some species of Dacryomyces is not marked, and these obconic Guepinias are perhaps better called Dacryomyces. Our figure (849) is a specimen soaked out and enlarged six diameters.

POLYPORUS ROSETTUS, FROM MRS. A. V. KIRKWOOD, AUSTRALIA (Fig. 850).—Submerismatoid. Proceeding from a hard, woody base, it divides above into a number of short, irregular lobes.

Fig. 850.

Polyporus rosettus. (Showing top and section.)

Pores small, round, irregular, white. Context very hard, white. Surface fuliginous. Spores 3 x 5, hyaline, piriform.

The method of development is unlike any other species known to me. It is not a true Merismus, but we would place it for convenience in that section. The feature of the species is the hard, woody context similar to Polyporus Spraguei and Polyporus ostreiformis and Polyporus osseus in texture. We have gotten it before from W. W. Froggatt, Sydney (No. 7), and Dr. J. B. Cleland (No. 71).

IRPEX NOHARAE, FROM K. MIYABE, JAPAN (Fig. 851).—This species named from Japan, we have from Mr. Miyabe for

the first time. We have only seen the types heretofore. It is a thin, membranaceous species with the incised teeth arranged lamelliform. In fact, it could be best designated as an irpicoid Lenzites. We do not know that Irpex takes this lenzitoid form excepting in Japan (Compare Irpex Tanakae, page 4, Letter 51).

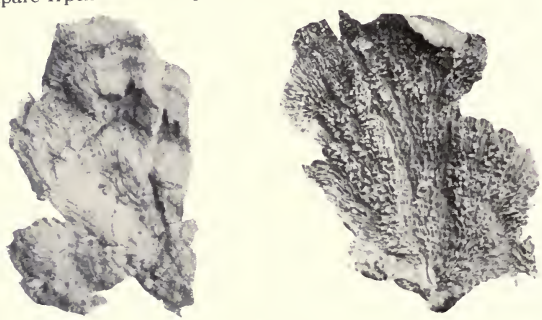


Fig. 851.
Irpex Noharae.

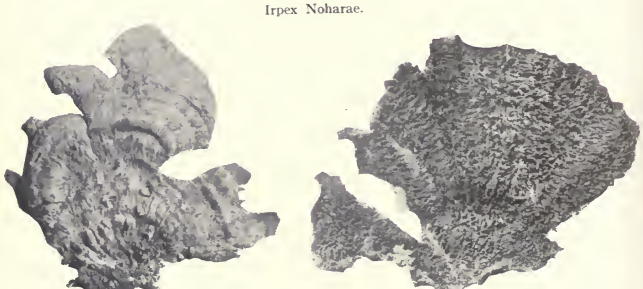


Fig. 852.
Irpex zonatus (from the type).

The original specimens of Irpex Noharae were semiresupinate, but this collection is all pileate. Irpex Noharae has such a close resemblance to Irpex zonatus, a misnamed plant from Ceylon (Fig. 852 photograph of the type) that there is a suspicion they are virtually the same species. However, Irpex zonatus does not have in its type form the peculiar teeth of the Japanese plant. Still they may be the same thing. While hymenial configuration is the basis of fungus classification, it is not always the test of a species. Polystictus pellucidus (Myc. Notes, p. 554) is another plant that is quite close in its leading features.

BOVISTELLA ECHINELLA, FROM J. F. BRENCKLE, N. DAKOTA (Fig. 853).—We have noted this unique little species

several times before (Cfr. Myc. Notes, pages 262, 286, 452) and the receipt of a collection from Dr. J. F. Brenckle, N. Dakota, leads to some additional remarks. The species is exceptional in several respects. It is the smallest and perhaps the rare t puff ball known. It is widely distributed and there are but nine collections known as follows: Ecuador, type, also Rev. F. Mille; Jamaica, W. Jekyll;

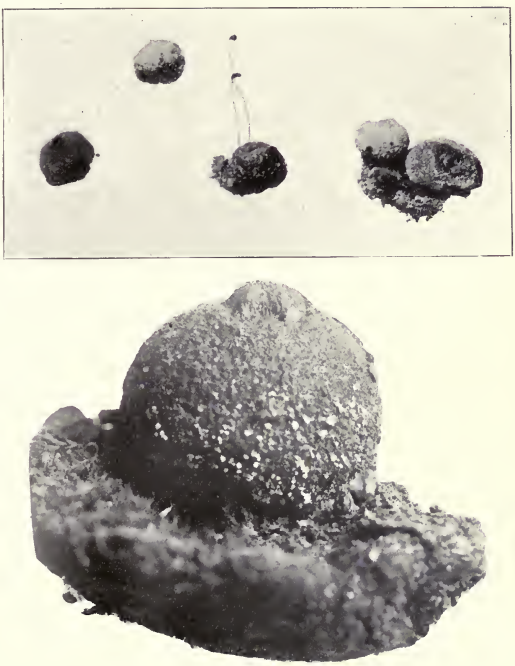


Fig. 853.
Bovistella echinella. The upper natural size. The lower enlarged six fold to show the mouth.

Mexico, J. N. Rose; Denmark, Rev. J. Breitung; Lapland, R. E. Fries; Michigan, B. O. Longyear; Washington, W. N. Suksdorf; North Dakota, Dr. J. F. Brenckle. All these nine collections are in our museum and but one (the type) in any other as far as I have ever noted.

The species is peculiar in another feature. It has a definite, protruding mouth (see lower figure 853), a character common in Geasters and Tylostomas but found on no other closely related plant such as Bovistella, Bovista, or Lycoperdon. This mouth has led to an important (to McGinty) historical discovery. Patouillard named it

Bovista echinella, but Batsch named it a hundred years before Patouillard saw it, Lycoperdon pusillum, and gave a characteristic figure of it, showing the protruding mouth which no other similar plant has. In the meantime an entirely different and very common plant has acquired the name Lycoperdon pusillum and hundreds of specimens have been so labeled, not forgetting to add "Batsch." I presume I have so named a hundred collections myself for correspondents. Prof. McGinty expresses his horror of such kind of work, and proposes to restore the name Bovistella pusilla (Batsch) McGinty according to the sacred principle of priority.

TRAMETES LACERATA, FROM JAMES R. WEIR, MONTANA (Fig. 854).—Resupinate white, without distinct margin,

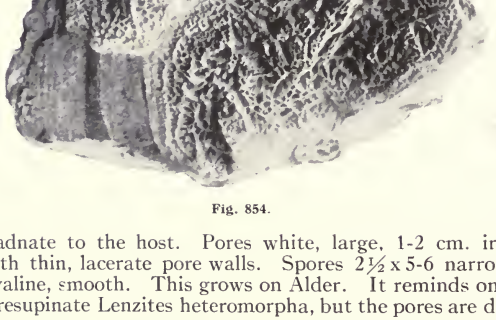


Fig. 854.

closely adnate to the host. Pores white, large, 1-2 cm. irregular-rigid, with thin, lacerate pore walls. Spores 2½ x 5-6 narrow, ellip, tical, hyaline, smooth. This grows on Alder. It reminds one somewhat of resupinate Lenzites heteromorpha, but the pores are different.

DALDINIA VERNICOSA, FROM BERRY BENSON, SOUTH CAROLINA.—A fine collection, typically as named by Schweinitz, but I question if it is really distinct from the common Daldinia concentrica of the entire world. In the type idea D. vernicosa differs from D. concentrica in its turbinate form and more shining surface, while D. concentrica is more globose and of duller surface. The spores (6-8 x 10-14) and perithecia are the same. As pointed out by Ellis the latter are monostichous, not polystichous as stated in Saccardo.

There are 24 species of Daldinia given in Saccardo, mostly from the tropics. For the most part they are Daldinia concentrica, a common and widely distributed plant. We get it from almost every country in the world, and in Australia it takes large size, two or three inches in diameter. In Europe Daldinia durissima was proposed by Fries many years ago, but no one else ever found it, and a type at Kew is the only common D. concentrica. Léveillé discovered two species in the United States, D. cingulata and D. loculata, both the common D. concentrica. Massee discovered Daldinia aspera in the West Indies, which is not a Daldinia at all (cfr. Myc. Notes, p. 579).

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 44.

CINCINNATI, O. DECEMBER, 1916.

LEWIS DAVID VON SCHWEINITZ.

UNIVERSITY OF CALIFORNIA

JAN 2 0 1942

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

LEWIS DAVID VON SCHWEINITZ.

The subject of our photograph, on the preceding page, is the pioneer mycologist of America. He it was who hewed the trail that has since been followed. Schweinitz was born at Bethlehem, Pa., February 13, 1780. His father came from Saxony, and was very active in establishing the Moravian church in this country. In this church young von Schweinitz was destined for the ministry, his education being acquired in the theological institutions of this denomination. When eighteen years of age, his father was called to Germany, and young Schweinitz was placed in college at Nisky, in what is now Silesia (Prussia). There he came in contact with Professor J. B. de Albertini, and the two enthusiastically pursued the study of the fungi of that region. At that time, mycology in Europe was in its formative stages, Persoon being the acknowledged authority. Albertini and Schweinitz, in 1805, published a work devoted to fungi, entitled *Conspectus Fungorum in Lusatiae*, which, with the exception of Persoon's works, was the first important, systematic publication on the subject. Although a rare book in the markets, it is to this day an authority on European plants, being quoted under the familiar title of "A. & S." The book is illustrated with twelve colored plates, picturing ninety species. These were drawn by young Schweinitz, and they are very good. I am not informed whether or not the collection of plants made by Albertini and Schweinitz is still in existence. They are not in the collection in Philadelphia, the only specimens I have ever seen being a few in Persoon's herbarium.

In 1812 Schweinitz returned to America, and was appointed general agent of the Moravian church in the Southern United States, with headquarters at Salem, N. C. Although much occupied with clerical duties, he still continued his work with fungi, and about ten years later, (1822), published at Leipsic, under the auspices of Schwaegrichen, his *Synopsis Fungorum Carolinae Superioris*. 1,373 species were listed in this work, of which 315 were claimed to be new.

In 1822 Schweinitz removed to his natal town, Bethlehem, Pa., where he resided until his death, February 8, 1834, at the age of fifty-four years. In 1831 he presented to the Philadelphia Academy

a paper, *Synopsis Fungorum America Boreali*, listing 3,098 species, of which 1,203 were named by Schweinitz. This paper was published in 1834, the year of his death, but whether or not it appeared before he died, I do not know.

During Schweinitz' life there was considerable activity in Europe in fungus work. Fries was then a young man, in the prime of his work. But in this country Schweinitz was absolutely alone, no one else apparently knowing even that such things as fungi grew. Schweinitz' herbarium is preserved in the Academy of Natural Sciences, in Philadelphia. It is in good condition, and fairly complete.

Schweinitz had four sons, all of whom were Moravian ministers. A number of his descendants still reside in the neighborhood of Bethlehem, and one, Dr. George von Schweinitz, is a prominent physician in Philadelphia. The most complete biography of Schweinitz was published in *The Popular Science Monthly*, April, 1904, and from this much of the data for this article has been taken. We are indebted to Mr. Eugene Rau, Bethlehem, Pa., for a copy of the photograph that we reproduce.

ADDITIONAL NOTES ON CORDYCEPS.

I am particularly interested in Cordyceps. They are most curious plants, usually developed from the bodies of some insect, larva, or pupa. I trust anyone who finds specimens will favor me by simply drying them and sending to my address. The host should always be dried and sent with the Cordyceps attached. If the species is small and several are found, I should like a liberal collection. The tropical species are very imperfectly known.

CORDYCEPS SOBOLIFERA, FROM J. UMEMURA, JAPAN.—This is the fourth collection we have received of this species, and as far as we noted there is not a specimen in any museum of Europe. We gave a full account of the plant in Mycological Notes No. 39. Mr. Umemura's plants are finely developed and confirm its identity with the West Indian plant. It is curious that the plant is only known from Japan and the West Indies, and illustrates the uneven distribution of fungi, or perhaps our imperfect knowledge of it.

CORDYCEPS NUTANS AND CORDYCEPS TRICENTRUS, FROM PROF. A. YASUDA, JAPAN.—These two species, which have the same form and similar hosts, are strongly distinct species, essentially different in their spores as well as their coloration. Prof. Yasuda has supplied from observation of the fresh plant the following notes:

CORDYCEPS NUTANS.—"Stroma very long. Head nodding or erect, fusiform, orange, 3-8.5 x 1-2 mm. Stipe black, except 7-14 mm. of the uppermost portion, which is orange, 5.5-17 cm. x 9.5-1 mm. Perithecia somewhat prominent. Asci slender, cylindrical, very long, 250-270 x 7-8. Ascospores filiform, at length many-celled, and then separating; separated cells *cylindrical. Truncated* at both ends, smooth, hyaline, *9-14 x 1.5* mic."

CORDYCEPS TRICENTRUS.—"Stroma very long, pale yellow. Head nodding, 5-10 x 1 mm. Stipe slender, 4-14 cm. x 0.4-0.5 mm. Perithecia not prominent. Asci cylindrical, slender, 120 x 5-6. Ascospores filiform, at length many celled, and then separating; separated cells *needle-shaped*, pointed at both ends, smooth, hyaline. *8-10 x 1-5 mic.*"

Fig. 855.
Cordyceps capitata.

Fig. 856.

Fig. 857.
Cordyceps ophioglossoides

CORDYCEPS CAPITATA AND CORDYCEPS OPHIOGLOSSOIDES.—Most species of Cordyceps are developed from insects, but these two are peculiar in their host, always occurring on hypogaeal fungi, viz., species of Elaphomyces. But two species are known with this habitat. Both are rather frequent in the United States and Europe. Massee would put these two species into a separate genus, on account of their host, which is hardly a logical stand for the author of Cordyceps lignicolum (sic) to take.

The distinction between Cordyceps capitata and Cordyceps ophioglossoides is not a distinction of shape, as is generally supposed, but there are two essential differences, stem attachment and spores.

Fig. 858.

CORDYCEPS CAPITATA (Fig. 855), grows directly from the host. The secondary spores (Fig. 858) are cylindrical, 3 x 12-16 mic. long. I think never 25-40, as stated in Saccardo, which record was probably based on segments that were not finally divided. The heads are usually subglobose (Fig. 855), though rarely clavate in the form called var. Canadensis, as shown in figure 860. This clavate form was named Cordyceps Canadensis by Ellis, but it is a form at the most, not a species.

CORDYCEPS OPHIOGLOSSOIDES (Figs. 856 and 857) is attached to the host by attenuated, root-like fibrils. The secondary spores (Fig. 859) are subcubical 2-3 x 3-4. As to shape, it is always club form as far as I know. It never takes the capitate form of the previous species.

Fig. 859.

Our figure 857, which shows the characteristic root attachment of Cordyceps ophioglossoides, was made from the specimen in Tulasne's herbarium at Paris.

CORDYCEPS CAPITATA VAR. CANADENSIS, FROM J. UMEMURA, JAPAN.—The usual form of Cordyceps capitata is shown in our figure 855. It occurs in Japan also, for it was well illustrated in Illustrations of Japanese Fungi, plate 12, figure 13. At first sight it would appear that Mr. Umemura's plant was Cordyceps ophioglossoides, with which it closely agrees in form, instead of Cordyceps capitata. The spores and host attachment, however, are those of Cordyceps capitata, and it is only a form. It was named as a species by Ellis, and the local name he gave it is not very applicable to a plant growing in Japan. While both the type form and the variety of Cordyceps capitata occur in Japan, the corresponding species Cordyceps ophioglossoides is not recorded, though it no doubt occurs there.

Fig. 860.

ELAPHOMYCES JAPONICA, FROM J. UMEMURA, JAPAN.—The Elaphomyces from Japan, on which Cordyceps capitata var. Canadensis was growing, impresses me at once as being different from what I had seen. The exoperidium (cortex) (Fig. 861) had peeled away and separated from the inner peridium, a feature I never noted on an Elaphomyces before. In the nature of the warts, color of gleba, and spores, it seems the same as Elaphomyces variegatus of Europe, which, however, always has the cortex closely adnate to the inner peridium. The inner peridium, about 1 mm. thick, is only about one half as thick as that of Elaphomyces variegatus, and of a different texture. The European species has a peridium as hard as a rock. This has much softer and thinner peridium, which cuts readily. It is probably best held as a form of the European plant, but it is different in the features noted.

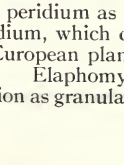


Fig. 861.

Elaphomyces variegatus seems to me to belong to the same section as granulatus and asperulus, but has much larger warts and thicker

peridium. I fail to see on dried specimens the "variegated cortex" from which it gets its name. Nor can I make out from my specimens the difference between granulatus and asperulus.

CATASTOMA ANOMALUM, FROM MISS A. V. DUTHIE, SOUTH AFRICA (Fig. 862).—The occurrence of this peculiar little species in South Africa is of much interest. It is the only Catastoma with a definite, protruding mouth and is unique in this respect. Heretofore it has been known principally from Australia, where it is apparently the most frequent species. The South African form is not exactly the same as the usual Australian. The mouth of these specimens is merely mammiform, while in the Australian plant it is usually definitely tubular. Also the color of the Australian plant is usually a rich brown, while the African specimens are less colored. The spores are smaller, measuring 4-5 mic., and about 6 mic. in the Australian. Of course, the South African plant would be a "new species" for some, but it is the same as the unique Australian species in its main characters, and is best so referred.

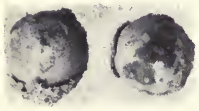


Fig. 862.

LYCOPERDON CRUCIATUM, FROM F. STOWARD, AUSTRALIA (Fig. 863).—Lycoperdon cruciatum is a common species in the United States (cfr. Myc. Notes, pp. 214, 231, Plate 51), and it is not infrequent in Europe. We get it from South America, but this is the first specimen we have received from Australia, where it must be very rare. We never had it from Africa, and it seems to be replaced in South Africa by Lycoperdon endotephrum, which has the same peculiar cortex, but violaceous gleba. Excepting these two species there is no other Lycoperdon where the cortex peels off in flakes. At Kew there is a single specimen of Lycoperdon cruciatum from Australia, called Lycoperdon stellatum. We included and illustrated it in our Lycoperdaceæ of Australia, page 32, under this name, stating at the time it was probably Lycoperdon cruciatum, a fact of which we are now assured from Dr. Stoward's specimens. It has the same gleba color, spores, capillitium, diaphragm, distinct sterile base, and similar though stronger cortex, and paler and firmer endoperidium. The slight differences do not make a species. The distribution of fungi is most peculiar. This species so common with us in the United States, is evidently most rare in Australia. On the other hand, Lycoperdon pratense, absent from the great portion of the United States, and known only from a small region in our Northwest, is the most frequent species they have in Australia.

Fig. 863.

PEZIZA CEREA, FROM MR. S. L. SPRAGUE, OHIO (Fig. 864).—We present a photograph of a very rare species, at least in this country. It grew on some woods dirt that had been brought with plant from Massachusetts. The fresh specimen was brought to us by Mr. Sprague. Peziza cerea is well named, for it has the appearance as though it were made of wax. It was illustrated by Sowerby (t. 3). In England, according to the records, it occurs usually on spent tan bark. In this country I have noted no record excepting Seaver, Iowa, which appears to me an error for the common Peziza vesiculosa.

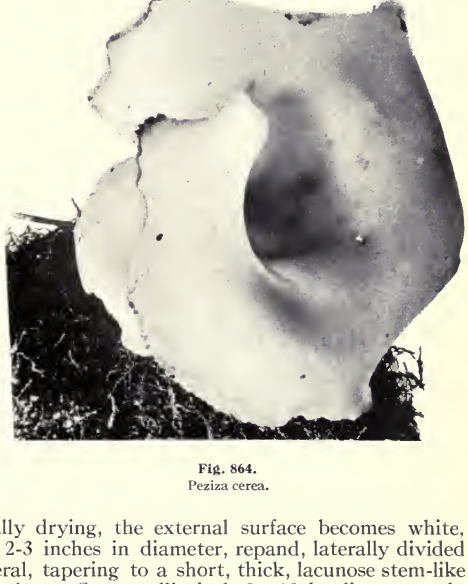


Fig. 864.
Peziza cerea.

Color very light pinkish buff of Ridgway, waxy in appearance. When moist, concolorous, both surfaces, but on partially drying, the external surface becomes white, furfuraceous. Cups 2-3 inches in diameter, repand, laterally divided or somewhat unilateral, tapering to a short, thick, lacunose stem-like base. Asci 240 mic. long. Spores elliptical, 8 x 12 hyaline, smooth. Paraphyses slender, very slightly thickened, hyaline, straight.

There has been no good figure of Peziza cerea given. Sowerby's is characteristic as to shape, but lacks the "waxy" effect. Cooke, p. 244, has but little resemblance to it in either shape or color. Price, fig. 80, is fair. We doubt if a drawing could be made to represent it as well as does our photograph.

HYSTERANGIUM PHILLIPSII, FROM J. UMEMURA, JAPAN (Fig. 865).—The Hymenogasters are fungi that grow mostly beneath the surface of the ground. A few of them are partly emergent. In Europe the subject has been finely worked by the best workers in Europe, viz. Tulasne and Vittadini, who published splendid monographs of them. In the United States, Harkness did a lot of work on the subject. The usual mycologists rarely see them, and the foreign species are practically unknown, though they no doubt occur in all countries, though not collected, for are not observed.

The species Mr. Umemura sends from Japan has small, hyaline spores 2½ x 4, like the spores of a Rhizopogon. It cannot be either of the European species, all of which have large spores 10 mic. or more. It seems to me to agree with Harkness' account of Hysterangium Phillipsii, though of course all determinations made from descriptions are more or less doubtful. Harkness has a figure showing fibrous rootlets, not on the Japanese specimen, but they may have been broken off. The spores are also given 2 x 5, which is narrower than in the Japanese, but taken as a whole, the description and figure agree very well with the Japanese plant.

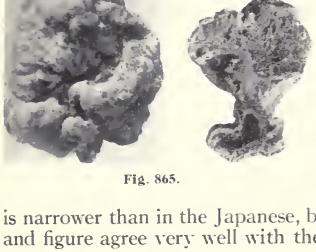


Fig. 865.

TRAMETES OCELLATA, FROM REV. TORREND, BRAZIL (Fig. 866).—This I hold as a form of Trametes hydnoides. No commoner plant occurs in the American tropics than Trametes hydnoides with its rigid, black surface hairs. Trametes ocellata is similar, the same as to context and form, but the surface hairs are softer and brown, not black. It is rare, and at first appears quite different. There is a plant in Africa, similar to Trametes hydnoides, which Hennings always referred to Trametes hydnoides. The African plant has always larger pores, and is Trametes hystrix, as named by Cooke. Another (or the same) African plant has still larger pores, then it becomes Hexagona hirta (cfr. Syn. Hexagona, page 7). In fact, there is a continued series, all with the coarse, dense, surface hairs, same context color, texture, but differing in size of pores, running as follows, from Trametes hydnoides with minute pores, to hystrix with larger pores, then Hexagona hirta still larger, and finally Hexagona apiaria with very large pores. The latter three are African and Eastern plants. Tra-

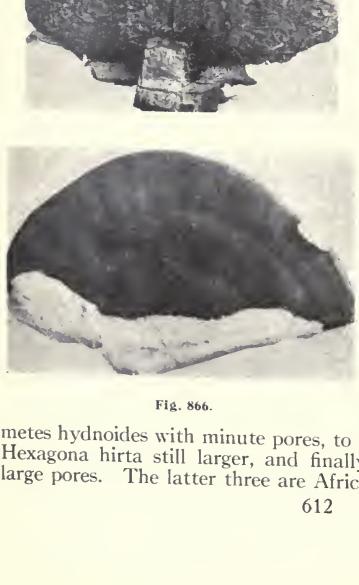


Fig. 866.

metes hydnoides is the only American one, I believe. Trametes pyrrhocreas of Australia, known only from type at Kew, is close, if not the same as hydnoides.

POLYSTICTUS RIGIDUS, FROM E. CHEEL, NEW SOUTH WALES (Fig. 867).—Pileus erect, spathulate, flabelliform (incurved and cup shape in type). Surface scabrous, hirsute, finely zoned. Context white. Stipe short (1 cm.), distinct from pileus. Pore surface smooth, pale. Pores very minute, hardly visible to the eye. Spores not found.

Polystictus embraces mostly flexible plants. This rigid, stiff species has no analogue in the other species with white context. The section (Petaloides 23) Microporus with brown context is similar as to texture. We would enter it in Section 22, though quite different from all others in this section. The pores are so minute that to the eye the plant appears to be a Stereum. The general resemblance to Stereum hydrophorum is close.

Fig. 867.

TRAMETES ALBOTEXTA, FROM P. VAN DER BIJL, AFRICA (Fig. 868).—Pileus sessile, 2-3 x 4-5 inches, an inch thick. surface reddish brown, dull, matt, soft. Context reddish brown, thin, soft. Pores rigid, small, round, an inch long. Pore tissue white, contrasting with the brown hymenium so that a section is variegated. Cystidia none. Spores pale brown, small, elliptical-subglobose, 3-4 x 4-5. The coloration of the surface, pore surface and context is reddish brown, the tissue of the pores white. I know no other Trametes or polyporoid with this peculiar color pore contrast. The pale colored spores might be the basis for a "new genus," but I think that would be "inutile."

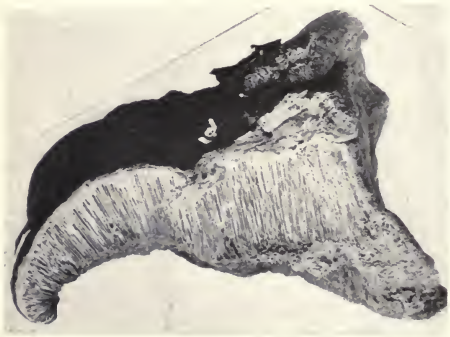


Fig. 868.

ABNORMAL FAVOLUS.—Plants that impress me as being anomalies or sports not infrequently reach me. We present two below that we think are derivatives from Favolus europaeus, though they have no resemblance to each other, and little to the usual form of Favolus europaeus. Nor can we explain why we think they are sports of this species, but we do.

FAVOLUS KAUFFMANII (Fig. 869).—Pileus pale liver color, smooth. Pores favoloid, with thick walls. Spores 4 x 12-14 hyaline, with lateral apiculi.

Based on a collection (No. 31) from Dr. C. H. Kauffman, Michigan. I think it is a variation of Favolus europaeus, but Dr. Kauff-

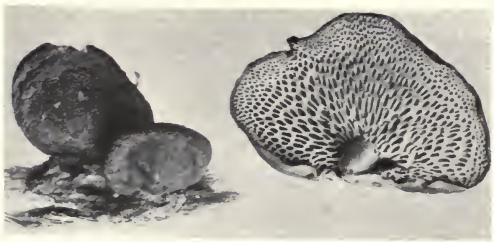


Fig. 869.

man does not agree with me. It differs, as indicated above, and the color is quite different. The cuticle is closely adnate, and does not peel away as it does in the normal form. I once made in Kentucky a collection showing the same difference as to color, but that collection had normal pores. I have never considered it other than a variation of Favolus europaeus.

Fig. 870.

FAVOLUS WHETSTONEI (Fig. 870).—Stipitate, with large, angular, thin pores decurrent on the stem. Spores 4 x 10, hyaline, laterally apiculate. Pileus surface white, with faint indications of the reddish color of fresh Favolus europaeus. Based on a single specimen from M. S. Whetstone, Minneapolis. It is so different from the normal Favolus europaeus that we hardly expect others to agree with us in referring it as a sport.

ISARIA BUNTINGII, FROM R. H. BUNTING, AFRICA (Fig. 871).—The genus Isaria is supposed to be the conidial or preliminary fruiting stages of Cordyceps. (cfr. Cordyceps of Australasia, pages 4 and 5.) The perfect Cordyceps is a subsequent development. But four large Isarias are known to me on insects or cocoons, viz., Isaria farinosa (Cord. Aust., Fig. 613), Isaria atypicola Japan (cfr. Myc. Notes, p. 568), Isaria gigantea Cuba, which has never been illustrated, and the above from Africa.

Fig. 871.
Isaria Buntingii.

We present a photograph of Isaria Buntingii, which was made by Mr. Bunting, and which tells the whole story as far as known. It differs from other species in having the fruit branches, forming a capitate cluster at the apex of the stem. As will be seen, it grows from cocoons buried in the fallen leaves. We hope Mr. Bunting will favor us with specimens of the plant, and we particularly trust that he will watch out for the subsequent (Cordyceps) clubs that no doubt develop from the same host.

PILEATE MERULIUS LACRYMANS, FROM JOHN DEARNESS, CANADA (Fig. 872).—We present photographs of what we take to be pileate Merulius lacrymans. In all our books and in all specimens we ever saw, Merulius lacrymans is a resupinate plant, and it seems impossible that it could develop a pileate form. At the same time it is no more improbable than that the two specimens we photographed, one sessile apus, the other stipitate, should be the same thing, and they grew from the same mycelium and were different developments of the same plant. We know our reference will be received with incredulity, but with the same context, same tissue, same hymenium, same spores, same habitat, we believe we are correct in so referring them. There are more strange things under the sun, Horatio, than are dreamed of in your philosophy.

Fig. 872.

Prof. Dearness states that he collected forty pileate specimens, apus, pleuropus, mesopus, all with good pileate development

IRPEX OWENSII, FROM J. M. GRANT, WASHINGTON (Fig. 873).—In a pamphlet on the genus Radulum, now in type, but not printed, we include under the name Radulum Owensii, specimens received from C. E. Owens (No. 2028 on Quercus). It was a good "Radulum." In fact, we mistook it for Radulum hynoideum

Fig. 873.

when received. The plants just at hand from Mr. Grant have the teeth so much better developed that it is an Irpex instead of a Radulum, which shows how one can be mistaken as to the genera. We would describe it as follows:

Resupinate. Mars orange (when dry). Teeth at first tubercular with irregular protuberances. When developed irregular, compact, rigid, poroid at base, hence could be classed also as Poria. Cystidia none. Basidia subhyaline in a palisade layer. Subhymenial tissue deeply colored. Spores 3-4 x 6-8, hyaline, smooth.

SECOTIUM ACUMINATUM, FROM F. W. STOWARD, AUSTRALIA (Fig. 874).—The Gastromycetes of Australia are remarkable, not only on account of the many endemic species and genera not found in other countries, but the apparent absence of some common species (as Geaster hygrometricus) that occur widely distributed elsewhere in most countries. Secotium acuminatum is recorded in Australia and found in the Handbook, but like many records of this uncertain publication, there is little basis for it. The little fragments on which the determinations were made more than fifty years ago, are entirely inadequate. Many specimens of Gastromycetes have reached me from Australia, ten times more than in all the other of the museums of the world, but never before has any one from this country sent me this species! It is a species, however, frequent in the United States and Eastern Europe.

Fig. 874.

As will be seen from the photograph, Secotium acuminatum is a misnamed plant. This specimen not only is not acuminate, but it is obtuse, and with us the specimens are never more than "obtusely acute," if the expression can be allowed. This led to a most amusing position, that our own Prof. Peck held for many years. When he received the plant from Wisconsin, he was innocent of any knowledge of the existence of the genus even, but it did not deter him from discovering that it was a "new species" of Lycoperdon, to which genus it has not even a suggestion of an analogy. He called it Lycoperdon Warneri.

Hazslinsky, a local collector in Hungary, who was quite busy promulgating new species of Gastromycetes, none of them of any value as far as I ever learned, also discovered that it was a new species which he called Secotium Szabolcsense. He was quite indignant that Prof. Peck had renamed his species, and published his protest, though before he got through "indignating" he admitted that both his plant

and that of Peck were Secotium acuminatum, and that Montagne had beautifully illustrated it. Peck admitted the genus, but for many years maintained that our American plant could not be Secotium acuminatum, for it was never acuminate. As a matter of fact, neither is the European plant, nor Montagne's figure, nor the original specimen which was from Algeria. Montagne simply misnamed it, for at the best the plant is never more than "obtusely acute." The plant has an older name (from Russia), which date dictionary jugglers have tried to substitute, but as it is about as bad as acuminatum, not much success has rewarded their efforts.

Fig. 875.

STEREUM SOWERBYI, FROM J. M. GRANT, WASHINGTON (Fig. 875).—(Compare Stipitate Stereum, page 20.) This is a very rare plant in Europe, and these are the first specimens I have seen from this country. The species is very close to Stereum diaphanum, but differs in being a slightly thicker plant, not so pale, and the upper surface is marked with darker, radiate fibrils. The photograph (Fig. 875), enlarged to show these fibrils, which are the main distinguishing features.

POLYSTICTUS XANTHOPUS-CONCINNUS, FROM P. VAN DER BIJL, SOUTH AFRICA (Fig. 876).—Intermediate between these two species. Polystictus xanthopus (cfr. Stip. Pol. p. 173) is an abundant species in Africa and the East. I presume I have fifty collections. Every one of them is perfectly glabrous, both stem and pileus. Polystictus concinnus is same plant, except dark color, and pileus and stem are covered with fine, velvety pubescence. This specimen has the pubescent stem of concinnus and the nearly glabrous and pale colored pileus of xanthopus. In nature there is no "such animal" as species with definite limitations as mycologists profess.

POLYSTICTUS AFFINIS-CONCINNUS, FROM MR. VAN DER BIJL, SOUTH AFRICA (Fig. 877).—A pleuropodial plant, exactly same in color and pubescence as the preceding plant. Surely both are the *same species*, although in our system of classification they go in different sections of the genus. We refer the latter to Polystictus affinis, but it is not exactly that, for affinis is glabrous.

Fig. 876.

Fig. 877.

STEREUM SULCATUM, FROM JAMES R. WEIR, IDAHO (Fig. 878).—This species was named by Burt, but as it has been published by Peck, I suppose it is public property now. It is a hard, rigid plant, with a reflexed pileus and white hymenium, which turns red when bruised. Context white, hard, with a yellowish cast. Spores globose 5-6 mic., hyaline, smooth. Cystidia few, but large, typical, thick-walled metuloids. I do not make out any ducts found in most Stereums that bleed, but no doubt they are present.

Fig. 878.

The species is a "Lloydella," but the author does not take Bresadola's views on "Lloydella" as seriously as he does Cooke's similar views on "Hymenochaete." Logically, both genera have the same value, which is not much in either case for me. Stereum sulcatum grows on spruce and hemlock. My best thanks are extended to Mr. Weir for the specimen.

Fig. 879.

We have recently gotten Stereum sulcatum (Fig. 879) from Prof. A. Yasuda, Japan (376). It agrees with our American plant in every character. It is a Lloydella for those who recognize the genus. This is similar to Stereum annosum and Stereum ferreum, both of which, however, have brown context. Both are "Lloydellas" and both are pileate species, though based on resupinate fragments and classed in Saccardo in the resupinate section. Stereum stratosum is a similar, thick plant with pale context, but it has no metuloids. Stereum contrarium, named from Japan, from the description, could be taken for this plant, but it is Stereum princeps.

EXIDIA CANDIDA FROM J. M. GRANT, WASHINGTON (Figs. 880 and 881).—Applanate, white with grayish, cerebriform lobes. Basidia 16-20 mic. oblong or globose, with granular contents. Spores 8 x 16, hyaline, slightly curved, with granular contents, laterally apiculate. Imbedded ducts, none. Papillae, none. The basidia are borne near the surface, not deeply imbedded as in most tremellaceous plants. It has much resemblance to Exidiopsis alba. (Note 48) (not Exidia albida of Europe) but differs entirely in its spores.

Fig. 880.

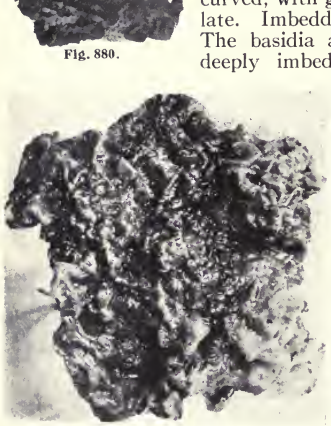


Fig. 881.

Years ago in England a white, tremellaceous plant was named Tremella albida, and since it is the fashion to so call all white, tremellaceous plants. Two quite different species have generally passed under this name (cfr. Note 48), viz. Exidia albida of Europe, and Exidiopsis alba of the United States. I am confident that this species, quite different from either, would be so referred by the older namers.

We present herewith, figure 880, the dried plant as received by me. Figure 881 as it soaked out after a short time in water. No class of fungi make poorer dried specimens than tremellaceous plants, but none are more satisfactory to work with, for a few minutes soaking restores them to the same condition as when freshly collected.

We hope our correspondents in tropical countries will collect every tremellaceous plant they note, and dry it. It is a mistake to send them preserved in formaline, which destroys their color and often turns them into an amorphous mass.

DACRYOMYCES DIGRESSUS, FROM MISS A. V. DUTHIE, SOUTH AFRICA (Fig. 882).—Thin, gelatinous, cerebriform. Color pale, dirty yellowish. Basidia forked. Spores 6 x 12, slightly curved, laterally apiculate, hyaline, smooth.

Fig. 882.

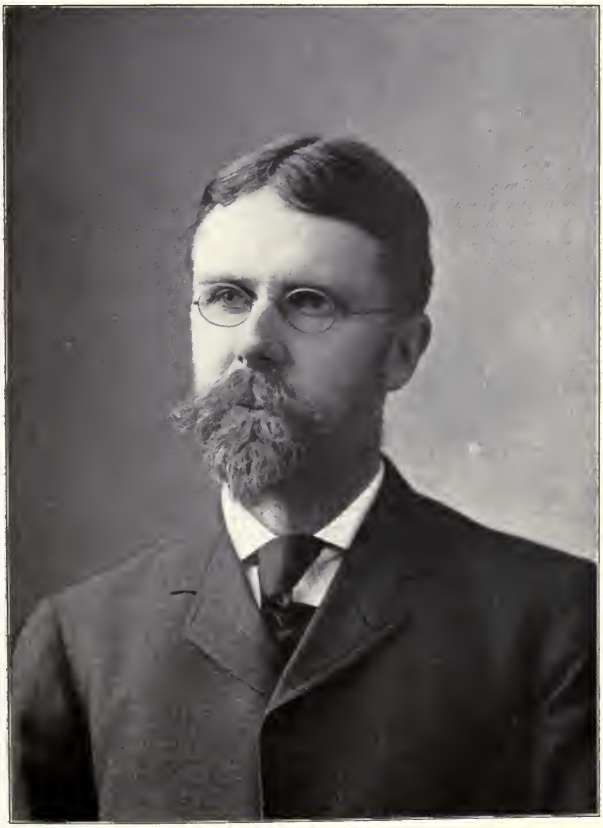
This resembles Tremella lutescens but has entirely different basidia. It departs from the usual Dacryomyces, being larger with aspect of a Tremella. I know but one other, viz. Dacryomyces aurantius of the United States. The spores are those of Dacryomyces as to shape, but I found none septate which is rare in this genus. They probably become septate in germination.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 45.

CINCINNATI, O. JANUARY, 1917.



PROFESSOR ROLAND THAXTER.

UNIVERSITY OF CALIFORNIA
AT LOS ANGELES
JAN 2 0 1949

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

PROFESSOR ROLAND THAXTER.

The photograph we present is that of the best known of specialists working on American mycology. Professor Thaxter occupies the chair of Cryptogamic Botany at Harvard University, where he graduated in 1882. For about twenty-five years he has had charge of the students in mycology in Harvard University. Professor Thaxter is the world's authority on the class of fungi known as Laboulbeniaceae. These fungi are minute species, attaching themselves to the bodies of beetles, flies and other insects. They were practically unknown to the world until Professor Thaxter became interested in them, and he has devoted his life to their study. He has discovered, named and illustrated several hundred species, and is not only the world's authority on the subject, but he is the only one who really knows anything about it at all. In pursuit of his studies he has worked over not only the mycological section in the museums of Europe, but also the entomological section, and has traveled and collected extensively in foreign countries, such as the West Indies and South America. In addition to this, he has industriously collected Cordyceps and hypogeal fungi, and has accumulated more material in these families than can be found in any other collection. He has never published on these subjects, but has in view a publication, when he has finished with the Laboulbeniaceae.

Professor Thaxter is now in his fifty-ninth year, quiet and reserved. It is always a pleasure to meet him. On our rare visits to Harvard we have always enjoyed a visit with him. The photograph that we present was taken four or five years ago, but is an excellent likeness of him to-day.

RARE OR INTERESTING SPECIES OF FUNGI RECEIVED FROM CORRESPONDENTS.

POLYSTICTUS FLABELLIFORMIS VAR. JAPONICA, FROM J. UMEMURA, JAPAN. Polystictus flabelliformis (cfr. Stipitate Polyporoids, page 143) is a common species in the East. It is the only one in this section I found in Samoa. It usually corresponds to the type idea from Mauritius with a lateral stem, one half to an inch long. A subsessile form is the common form in Japan. It is paler color, the pores are whiter, and it is a fairly constant form in Japan, but not elsewhere. We have specimens as follows: Umemura, 15, 73, 76, 154, 175; Yasuda, 115, 253. (We have one collection from Madagascar.) Professor Yasuda writes, "These sessile, villose

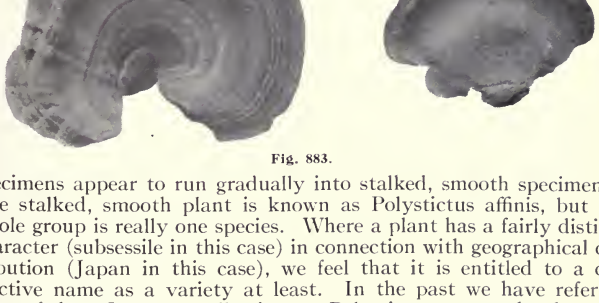


Fig. 883.

specimens appear to run gradually into stalked, smooth specimens." The stalked, smooth plant is known as Polystictus affinis, but the whole group is really one species. Where a plant has a fairly distinct character (subsessile in this case) in connection with geographical distribution (Japan in this case), we feel that it is entitled to a distinctive name as a variety at least. In the past we have referred some of these Japanese collections to Polystictus pterygodes, but this species (very rare) has in its type idea a shiny, glabrous pileus, the same as Polystictus xanthopus, but sessile.

LACHNOCLADIUM CONGESTUM, FROM E. CHEEL, NEW SOUTH WALES (Fig. 884).—Berkeley named this plant as Thelephora. There is in warm countries a type of dendroid plants that should be classed in Clavariaceae, viz., the hymenium is amphigenous and they resemble Clavarias excepting that they are tough in texture and in their spores. The true Thelephora genus has its hymenium on one surface only (though there are exceptions). The

spores of this species are 6 x 8, colored, slightly irregular in outline, and very slightly tubercular. Each has a large gutta. The proper generic classification is a question. As to color and spores it is close to Thelephora. As to general form and amphigenous hymenium it is Clavariaceae. It is not a true Lachnocladium excepting in a broad sense, including both hyaline and colored spores. No species of this type of plants occurs in Europe or the United States, hence we are not troubled with the question of its proper classification in our own flora.

Lachnocladium congestum seems fairly common in Australia. We have gotten it before, but these are the first good specimens. Lachnocladium Archeri (Thelephora for Berkeley) is a very similar plant, but more slender and only known from the type. We present a photograph of Lachnocladium congestum (Fig. 884), also Lachnocladium Archeri (Fig. 885), both from the types at Kew. We judge from our photographs that Lachnocladium Kunzii from Java is the same as Lachnocladium congestum. Why Berkeley called one Lachnocladium and the other Thelephora, I do not know.

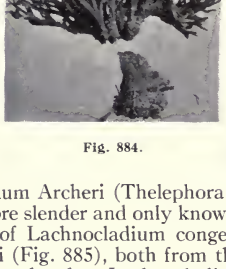


Fig. 884.

Fig. 885.

POLYPORUS POCULUS, FROM MISS A. V. DUTHIE, SOUTH AFRICA (Fig. 886).—A fine collection, and the first time ever collected in Africa. A full account was given, Myc. Notes, Old Sp. Ser., p. 45. This unique little species was originally from the United States, and, until I investigated, it was supposed to grow nowhere else. It is rare in foreign countries, but in the museums of Europe I dug up four collections (cfr. Myc. Notes, Pol. No. 3, p. 44), French Guiana, Australia, Brazil and Japan. I have since gotten fine collections from Japan (A. Yasuda). Now that Miss Duthie has found this curious species from Africa, it is known from every continent excepting Europe. With us it usually grows on chestnut bark; Miss Duthie found it on eucalyptus.

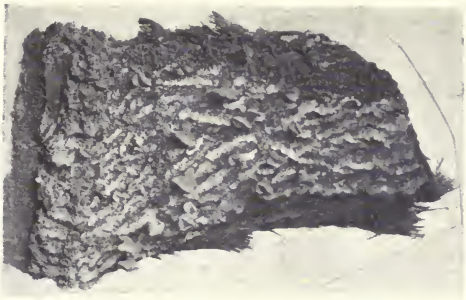


Fig. 886.

IRPEX CONSORS, FROM J. B. CLELAND, AUSTRALIA (Fig. 887).—Irpex consors (1877) from Japan, Irpex brevis (1855) from New Zealand, Irpex decurrens (1891) from Japan, and probably Hydnum meruloides (1883) from Australia, are all, I believe, one and the same species. All were named by Berkeley, but Irpex decurrens was only a mss. name for the collection that Berkeley published as Irpex consors. Fifteen or twenty years after Berkeley had named it (for the third or fourth time), Cooke dug up the same collection from Japan which he published as Irpex decurrens. Lately I have gotten several collections from Japan (which I referred to Irpex consors), and on comparison I find in all things the same as the Australian plant. It does not occur in the American flora.

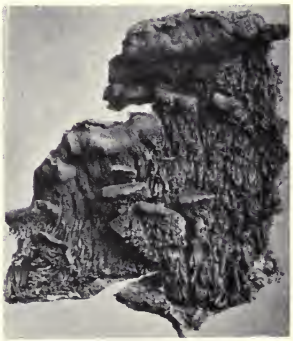


Fig. 887.

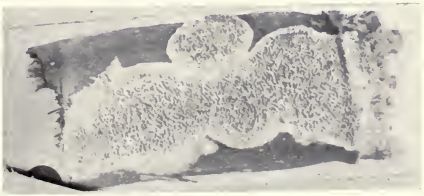


Fig. 888.

POLYSTICTUS SINUOSUS, FROM JOHN A. STEVENSON, PORTO RICO (Fig. 888).—This is the same plant as Poria sinuosa, excepting it develops a narrow, reflexed pileus. Poris sinuosa in Europe and the United States is always resupinate. It is very close to Polystictus pinsitus, but the sinuate hymenium (Fig. 888) is of a different type. It is also quite close to Polystictus Blumei of the East.

POLYSTICTUS GLABRATUS, FROM PROF. A. YASUDA, JAPAN (Fig. 889).—Pure white, drying white. Pileus spathulate or cuneiform from a short, stipe-like base. Context thin, white. Surface uneven, glabrous, very faintly zoned. Pores small, round, fleshy, entire. Cystidia, none. Spores allantoid, 1½ x 4-5.

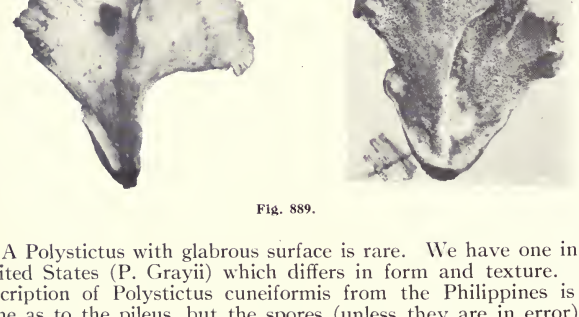


Fig. 889.

A Polystictus with glabrous surface is rare. We have one in the United States (P. Grayii) which differs in form and texture. The description of Polystictus cuneiformis from the Philippines is the same as to the pileus, but the spores (unless they are in error) are entirely different. Berkeley has a Polystictus sub-pellucidus from Japan which is close. The type at Kew is quite poor and was described as silky, hirsute. Polystictus elongatus, a common plant in the East, is also close, but differs as to texture, surface and pores. Type, Yasuda, No. 372.

LENZITES GUINEENSIS, FROM P. VAN DER BIJL, SOUTH AFRICA (Fig. 890).—This is another of the old Friesian species, originally named from South Africa, of which no type exists, and is determined from the description. Fries gives a figure in Reliquias Afzelianae which corresponds closely enough. Surely it is only a form of Lenzites betulina (as originally referred by Fries), with the same surface and context color (white), but it is a more rigid form than the European, and has thick, rigid gills. It differs from the description, as the edges of the gills are not "dark, cinereous," but it is not worth while embarrassing the subject with a new name because of a little discrepancy of this kind. We have gotten the

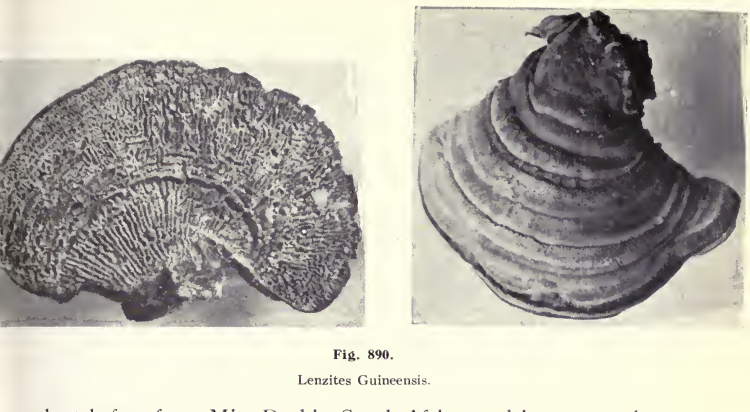


Fig. 890.

Lenzites Guineensis.

plant before from Miss Duthie, South Africa, and it seems to be, as far as we know, a form peculiar to this region.

POLYPORUS (GANODERMUS) UMBRACULUS, FROM J. GOSSWEILER, AFRICA OCCIDENTALIS (Fig. 891).—This was named by Fries from Afzelius' collection from Sierra Leone about ninety years ago, and I did not find a specimen in any museum of Europe. While no type is known, coming from the same locality, agreeing with the description, and agreeing with the figure that Fries cites, there is no question of its identity. When Persoon published the fungi of Gaudichaud's collection, he figured a Polyporus (t. 2, f. 2), which in grosser features is the same as this plant. Persoon named it Polyporus leptopus. It came from the East Indies, and the type is preserved at Paris. Fries referred this figure to his previously published Polyporus Umbraculus, and Patouillard accepted it, but in my work I demurred, for we knew what Polyporus leptopus was, and we did not know what Polyporus Umbraculus was. I feel that the receipt of the specimen from the "type locality," agreeing exactly with the figure and description, and *differing entirely in spores* from Polyporus leptopus, justifies my conclusion. Both species have the same strongly laccate, black stem, fragile and hollow, and the same pileus and pores, but are quite different in their spores.

Polyporus leptopus has globose spores, 12 mic., strongly rough and without apiculus. It belongs in section Amaurodermus (6b). Polyporus Umbraculus has obovate spores, tapering to a strong hyaline, apiculate base, about 12 mic. long and 10 at the broadest part. They are also strongly rough and are very abundant in the specimens. It belongs in the section (3) Ganodermus. Polyporus Henningsii (cfr. Stip. Pol., page 105, fig. 401) is probably the same as Umbraculus—a short-stemmed form of it.

It affords me more gratification to get one of these old puzzles settled than it would to receive a hundred "new species."

Fig. 891.

MUTINUS BAMBUSINUS, FROM J. GOSSWEILER, WEST AFRICA.—It is a question whether the tropical plant that passes for Mutinus bambusinus is really distinct from the Mutinus caninus of Europe. The specimen from Mr. Gossweiler, Fig. 892, is smaller and more slender than our figure of Mutinus bambusinus (cfr. Syn. Phalloids, fig. 26). The coating of gleba is thick and is separated at the base, giving it a pileate appearance. The plant has no pileus, however, the gleba is borne directly on the stem. The "species" of Mutinus have few distinguishing characters, excepting general size and shape, but we would not like to propose a new name for a collection that is only smaller and more slender than usual.

Fig. 892.

THELEPHORA MYRIOMERA, FROM E. CHEEL, NEW SOUTH WALES (Fig. 893).—I judge from description it is this plant which was named from Australia. It is not a European form, although it might be taken for a lacerate form of Thelephora terrestris. It is a true Thelephora as to color and spores, with hymenium on the lower side only. No type of Thelephora myriomera exists, and I think we are justified in taking this name for a plant from the same country, and answering the description.

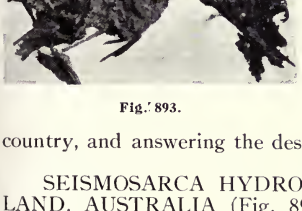


Fig. 893.

SEISMOSARCA HYDROPHORA, FROM DR. J. B. CLELAND, AUSTRALIA (Fig. 894).—Additional specimens clear up the mystery that surrounded this plant (cfr. Note 431). The hairs that I supposed were on the surface are really, I think, "gloeocystidia," and imbedded in the jelly. The basidia are oblong, cruciate, divided, with four long sterigmata. The spores are 6 x 12, elliptical, *pale* yellow tint. The hairs and basidia, both in a mashed piece, appear on the surface, but I believe they are imbedded in a very transparent mucilage. The color of the plant is pale amber. The structure of this plant is similar, and it is cogeneric with the common plant we have, called Exidiopsis alba (Letter 44, Note 48).

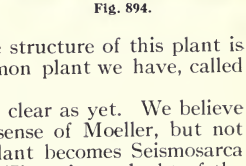


Fig. 894.

The genera of Tremellaceae are not all clear as yet. We believe Seismosarca to be same as Exidiopsis in sense of Moeller, but not of Brefeld. In this view our American plant becomes Seismosarca alba (not Exidiopsis alba as in Note 48). There is no doubt of the identity of Cooke's genus, notwithstanding that Cooke did not in his account and figure present a single feature correctly and did not

have the genus in its real character. The "setae" which Cooke shows as rigid, sharp, colored spines are in reality obtuse, colored bodies imbedded in the thin, gelatinous outer layer so that they appear on the surface, but have no resemblance, however remote, to Cooke's figure. The basidia are typically those of an Exidia as shown by Brefeld, and well known, with no resemblance to the clavate basidia of Cooke's figure, which no true tremellaceous plants have. The spores are elliptical, 6 x 12, pale yellow tint, and similar to Exidia spores. There are species of Dacryomyces with as deeply colored spores, and there was no basis for a genus on the color of spores. Cooke represented them as "bright brown," which I have always thought was a bull, for no tremellaceous plant is known with deeply colored spores. The spores that Cooke described and figured are found on the specimen at Kew, but they are accidental, probably from some Coniophora, as I suspected when I saw them, and of which I am now assured.

PORIA XYLINA, FROM A. YASUDA, JAPAN (Fig. 895).— Pure white, soft cottony, with broad, soft margin. Tissue of hyaline, loosely woven hyphae. Pores large, angular, oblique. Cystidia none. Spores abundant, elliptical, 6 x 8, transparent hyaline, with a large gutta.

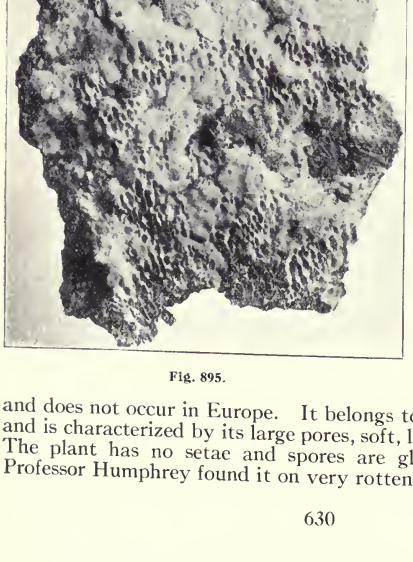


Fig. 895.

This is not a European nor an American species, and probably not named. The specimen is resupinate, hence a Poria, but it has a nodular effect, as though it might develop a pileus, in which case it would be a Polyporus. It is too soft for a Trametes.

PORIA SUBICULOSA, FROM MR. C. J. HUMPHREYS, WISCONSIN (Fig. 896). — We present a photograph as it is a rare species. Heretofore it has been collected but once by Peck in 1879 and does not occur in Europe. It belongs to the ferruginous section and is characterized by its large pores, soft, loosely adnate subiculum. The plant has no setae and spores are globose, hyaline 5-6 mic. Professor Humphrey found it on very rotten hemlock.

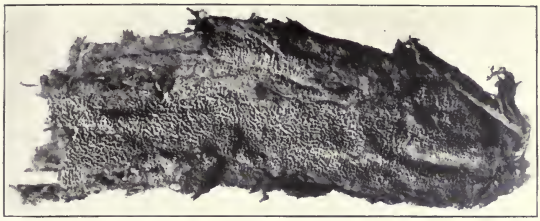


Fig. 896.
Poria subiculosa.

CATASTOMA MAGNUM, FROM GEORGE BROWN, NEW ZEALAND (Fig. 897).—This is only a large form of Catastoma anomalum (cfr. Lyc. Aust. page 27, Myc. Notes, page 319). But in addition to its large size it differs in other respects. The exoperidium is thick and leathery. In the type form of Catastoma anomalum it is thin and papery. The spores are 6-7 mic. and strongly rough, in anomalum they are slightly rough. Usually they are apedicellate, sometimes with a short, hyaline pedicel, 4-5 mic.

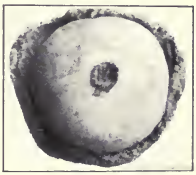


Fig. 897.

We consider it only a form of Catastoma anomalum, but it differs in the same degree that Catastoma subterraneum differs from Catastoma circumscissum. Neither Catastoma subterraneum nor Catastoma magnum are distinct species from the corresponding Catastoma circumscissum or Catastoma anomalum for me.

ASEROE RUBRA, FROM GEORGE BROWN, NEW ZEALAND.—We present a photograph of this plant (Fig. 898) made from a dried specimen sent by Mr. Brown. It shows how characteristic phalloids are when carefully dried. This figure presents the plant almost as well as the photograph of the fresh plant we produced on page 522 which was from Australia. This New Zealand plant has a shorter, thicker stem than the Australian plant photographed, but surely the same species. In fact it has become very well established now that there is but one species of Aseroe in Australasia, although the Handbook carries three (including a "variety").

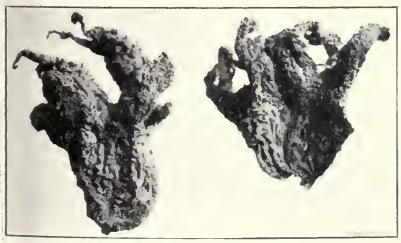


Fig. 898.

Fig. 899.
Polystictus formosae.

POLYSTICTUS FORMOSAE, FROM A. YASUDA, JAPAN (Fig. 899).—Pileus thin, pale, glabrous, rugulose, with narrow darker zone. Context white. Pores large, rigid, angular, shallow.

A single specimen, No. 391, from Formosa. The pores are exactly the same as those of Polystictus Persoonii, and while I can not assert it, I have a feeling that it is an extreme form of this species. Type Yasuda, 391, Formosa.

BOVISTELLA OBLONGISPORA, FROM MISS A. V. DUTHIE, SOUTH AFRICA.—Peridium thin, globose 1-2 cm. in diameter. Cortex furfuraceous. Gleba compact, olive then umber. Sterile base none. Capillitium deep colored, long, intertwined, much branched, about 3 mic. in diameter. Spores (Fig. 900) regular 4 x 6 mic. oblong, dark colored, smooth, with a short, thick, permanent, subhyaline pedicel 4-5 mic. long.

Fig. 900.

This species belongs to the 4th section of the genus (Myc. Notes, page 285) and is the only species of Bovistella known with oblong spores. The plant is quite similar to Lycoperdon oblongisporum in several respects, but the latter does not have pedicellate spores.

POLYPORUS OBNIGER, FROM DR. F. STOWARD, AUSTRALIA (Fig. 901).—Pileus (about 2 x 3 x 7 cm.) with a short lateral stipe, thick, rigid. Surface smooth, black. Context pale isabelline. Pores minute, round, with greyish cinerous mouths (when dry), decurrent to base of stem. Cystidia none. Spores not found.

Fig. 901.

This has the aspect of a Melanopus, but there is no indication of black on the stem. It goes in Section Petaloides 19 of my Stipitate

Polyporoids pamphlet, but if I were rewriting it I would rearrange this section 19, uniting subsection *a* with previous subsection and renumbering 19*b*. From the description one might take this to be Polyporus tristiculus of South America, but to me plants have little relation excepting the arrangement.

CYCLOMYCES GREENII, FROM J. UMEMURA, JAPAN (Fig. 902).—The occurrence of this rare plant in Japan is of the greatest interest. For many years it was looked upon as among the rarities of the United States and it is not often collected with us. A full account was given in Mycological Notes, (page 488). We reproduce a figure to give the Japanese collectors an idea of this curious fungus. The gills are concentrically arranged directly contrary to the usual way gills are placed. Mr. Umemura's plant is undeveloped but is unquestionably the same as our American plant. Only twice before has Cyclomyces Greenii been collected in the East and both times discovered to be a "new species." First by Hooker in India sixty years ago, and called by Berkeley Cyclomyces turbinatus, then it was sent to Patouillard from Java twenty years ago, and called Cyclomyces Javanicus. This is the first time we have ever gotten it excepting from United States. When the truth is learned about fungi, it is found that the species are relatively few, the distribution wide.

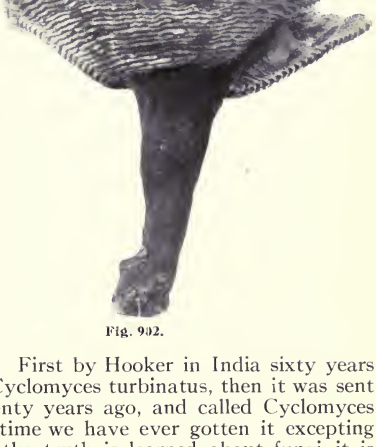


Fig. 902.

IRPEX IYOENSIS, FROM A. YASUDA, JAPAN (Fig. 903).—As named by Professor Yasuda. Effused with reflexed pileus. Surface faintly zonate, dark. Spines 2-3 mm. long, irregular, connate at base. Hymenium dense, pubescent with short (8-12 mic.) subhyaline, projecting hairs, and with rare long (projecting 30-35 mic.), deep colored setae. Spores no doubt hyaline, not found. There are numerous small, hyaline, globose bodies 2-3 mic. which I take to be conidial spores.

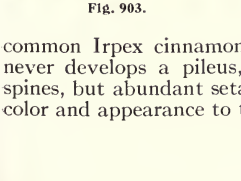


Fig. 903.

Irpex iyoensis is closely related to the common Irpex cinnamomeus of the United States, which however, never develops a pileus, and which has exactly the same colored spines, but abundant setae. The spines of the two species are same color and appearance to the eye. I know no other species with cin-

namon colored spines. The pileus of specimens received is dark colored, but appears to me as though weathered, and I presume the natural color is cinnamon. The plant came from the province of Iyo and I suppose the name is Iyo latinized. In this connection, it is strange that our most abundant Irpex cinnamomeus has not been found in Europe or Japan.

THELEPHORA FLABELLARIS, FROM DR. M. S. WHETSTONE, MINNESOTA (Fig. 904).—This is a rare form. With same texture and surface as Thelephora caryophyllea, it is cut into

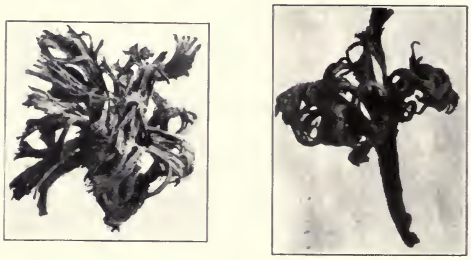


Fig. 904.
Thelephora flabellaris.

narrow segments. Berkeley who collected it in England, followed Fries in holding it as an "irregular branched frond" of Thelephora caryophyllea. I doubt it although it is so rare, it is hard to say. I never saw but three specimens, the English plant at Kew, a collection from O. M. Oleson, California, and this one from Mrs. Whetstone.

THE TROPICAL XYLARIAS.

The principal published work on the foreign Xylarias has been done by Cooke, who arranged and illustrated a series of figures. It is needless to say to those who have checked up after Cooke's work that it was very inaccurately done, and that many of his figures were simply reconstructed. The more recent workers, Rehm and Theissen, who have not studied the authentic types, have evidently reached many of these conclusions, mainly from Cooke's work, with the natural result that they have still further added to the confusion. I have never given the subject the detailed study in the museums that I would have wished, but I have photographed all the type specimens I found, and with these photographs and with the published accounts I think I can reach much more correct conclusions than have been previously recorded.

I shall be very glad if my correspondents will collect and send me the Xylarias that they note. These plants have a young, conidial

condition, usually white or partially white. The specimens should be collected when they are mature, that is, when they are all black. They never get too old to collect and furnish all the data, but they are often gathered too young.

"XYLARIA" FLABELLIFORMIS.—In our article on Isaria flabelliformis, Myc. Notes, p. 547, we state that we think no one but Schweinitz ever claimed to have found any but conidial spores. We forgot to mention it, but we were aware that Cooke had figured

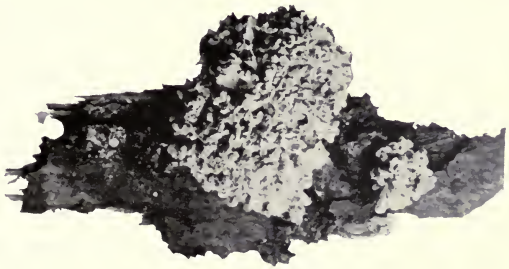


Fig. 905.

Isaria flabelliformis (from nature).

Fig. 906.

Cooke's idea.

the fruiting body of "Xylaria flabelliformis" Grevillea, Plate 171, Fig. 153 (reproduced, Fig. 906). Of course, Cooke was a wonderfully talented man. It takes something more than ordinary genius for a man to draw a picture of a fungus that he never saw. We present above a photograph (Fig. 905) from nature of "Isaria" flabelliformis, a frequent plant with us. Schweinitz claims that it had a perithecioid stage, and we reproduce his figure (907), which, while crude, was evidently intended to represent the plant. Fries stated, on the basis of Schweinitz's figure, no doubt, that it was the conidial state of Xylaria corniformis. I do not believe that there is any ground for that, but it was taken up and appears in Ellis' N. A. Pyrenomycetes. And finally Cooke was able, with his wonderful talent, to construct (in his imagination) a perfect plant (Fig. 896) which no one but Cooke (in his imagination) ever saw.

Fig. 907.

XYLARIA SCHWEINITZII, SENT BY DR. SYLVIO BONANSEA, MEXICO.—This species was originally collected in Surinam by Dr. Hering, of Philadelphia, and given to Schweinitz. Schweinitz did not publish it, but named it in manuscript Spheria capitata. After Schweinitz's death his herbarium was sent to Berkeley (Note). Ber-

keley published this as "Xylaria Schweinitzii, Berkeley and Curtis," thus advertising the three middlemen, none of whom had much to do with it excepting to pass it along. The original collector was left out in the cold in this advertising scheme, and the clerical trinity gathered all the glory.

Fig. 908.

Xylaria Schweinitzii is the same type of plant as Xylaria polymorpha. It has the same stroma, and similar perithecia. When fully developed, it has a subglobose head, and a slender stipe. The spores, 10 x 28, average broader, but it belongs close to polymorpha.

NOTE—We have noted this statement somewhere in print since our Letter No. 50 was published. At that time we reached the same conclusions, but only by inference, which, however, proved to be correct.

XYLARIA VARIABILIS, FROM J. GOSSWEILER, AFRICA OCCIDENTALIS (Fig. 909).—We determine this purely on the principle of the doctrine of probabilities. It came from the "type locality." While it has not much resemblance to the picture that Currey gave, it is about as near as most pictures that are supposed to represent Xylarias, nearer than many of them. In addition, it agrees with a remark of Currey's, "The inner tissue collapses in drying (as is the case with many Xylarias), leaving the bark (so to speak) in the form of a brittle, detached integument." This is shown in our photograph (but not in Currey's picture), and it is a better character than Mr. Currey thought. We have photographs of most of the historical specimens in the museums, excepting the relatively few that are in the British Museum. The facilities for photographing there were not as convenient for me as in other museums. Mr. Gossweiler's specimens also agree with the "type" in another feature—they are immature.

Fig. 909.

The perithecia are arranged in lines, on the order of those of the well-known Xylaria grammica of the American tropics, and the two species will go in the same group, if indeed they are not finally referred to the same species.

The determination of species by deduction is not very satisfying, as must be admitted, but it is better than past work that has been done on tropical species, most of which was pure guess work. We do not believe any portion of mycology is in a worse condition than that of the foreign Xylarias.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 46.

CINCINNATI, O. FEBRUARY, 1917.

PROFESSOR C. H. KAUFFMANN.

UNIVERSITY OF CALIFORNIA
AT LOS ANGELES
JAN 2 0 1942

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

PROFESSOR C. H. KAUFFMANN.

The photograph this month is of Professor C. H. Kauffmann, who is well known among the mycological workers of this country. He is a graduate of Harvard University, and is a professor in botany and curator of the Cryptogamic herbarium of the University of Michigan. Professor Kauffmann is one of the few American mycologists who has systematically studied our American agarics. He specialized on the genus Cortinarius, and is, we think, the only one in this country who has any knowledge of this difficult genus. We met Professor Kauffmann some years ago in Sweden, where he was making a special study of the Swedish Cortinarii. He is a close and careful student, and a liberal contributor to our museum. Rarely a season passes that we do not get from Professor Kauffmann a nice sending of rare and critically studied species.

Professor Kauffmann's ancestors were of the good old Pennsylvania Dutch stock, that has produced such workers as Schweinitz and Dr. Herbst. Some years ago we spent several weeks visiting Dr. Herbst in the section where the Pennsylvania Dutch reside, and we have a warm place in our heart for anyone who has sprung from this stock. Professor Kauffmann has written a number of interesting works, and has now in press a systematic arrangement of the agarics of Michigan, which we hope will be shortly published.

Professor Kauffmann is a conservative mycological worker, not tinctured with the ideas of the modern name-jugglers, and we hope his forthcoming work can be used as a basis for a manual of American agarics. Excepting the monographs of Professor Peck, there is very little now on the subject of much value.

THE GENUS MESOPHELLIA.

As we have previously stated in our Lycoperdaceae of Australia, the genus Mesophellia is the most curious genus known of the Gasteromycetes. It has in its center a hard, white core of the texture of the finest grained hard wood. The gleba lies between the core and the peridium. In all species heretofore known the gleba is greenish olive: in a species recently received from C. C. Brittlebank it is pinkish buff, with no green tint. Also in all species heretofore known the core is joined to the inner peridium by ligaments of the same hard tissue that proceed from the core. In this species there are no ligaments. The genus Mesophellia is only known from Australia, and excepting the specimens in our museum, most we have seen are at Kew. There are four species well enough represented to be named.

MESOPHELLIA ARENARIA (Fig. 910).—Exoperidium of coarse, fibrous tissue. Endoperidium thin. Gleba greenish olive. Spores elliptical, 5x10 mic., smooth. Core attached by ligaments. Although we have no specimens of this species, it is the best represented at Kew. It was the original species, collected in Tasmania, by Archer, and well illustrated by Berkeley in the Trans. Linn. Soc., Vol. 22. Afterwards Berkeley received it from Mueller, a more abundant collection by Muir ("Garden River, West Australia"), and tried to change its name to Inoderma, but to no avail. The bull made by Dr. Hollós in connection with the plant is explained in our Australian Lycoperdaceae in a note on page 40. Hollós discovered it was a "new genus" about twenty years after it was named. Cooke also got specimens and named it Diploderma glauca. The genus Diploderma of Cooke was made up of Mesophellias, Gallacea, and unopened Geasters, plants without the slightest resemblance or affinity to each other. Our figures, (910), made from specimens at Kew, show a specimen with the outer peridium, also a section with gleba and a section showing the core and ligaments attaching it to the inner peridium, the gleba having been dissipated.

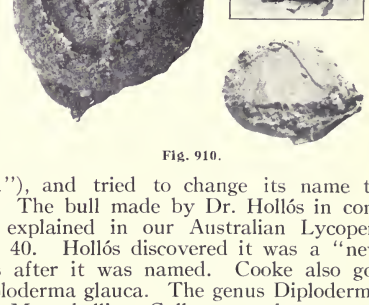


Fig. 910.

MESOPHELLIA SABULOSA (Fig. 911).—Exoperidium in the nature of an agglutinate sand case, other characters as those of M. arenaria. This was named by Cooke as Diploderma sabulosum. I have a specimen from J. G. O. Tepper, but it is evidently a rare plant. It may be the same as Mesophellia arenaria, but the texture of the exoperidium appears to me quite different. Our figure 911

shows the core in situ in the peridium with the ligaments binding them together. The gleba has been dissipated. Also a figure of the core separate.

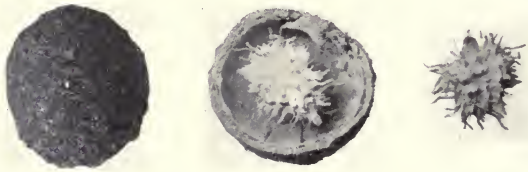


Fig. 911.

MESOPHELLIA PACHYTHRIX. This also may be Mesophellia arenaria, but the type (all that is known) has capillitium of a different color, much coarser, being compared in color and texture to the fiber of the outer shell of a cocoanut. The spores also appear minutely warted. It is only known from one collection at Kew, called Diploderma pachythrix, by Cooke.

MESOPHELLIA CASTANEA, FROM C. C. BRITTLEBANK, AUSTRALIA (Fig. 912).—Peridium of thick, hard, woody tissue. Surface smooth, pale. Gleba pale pinkish color. Capillitium slender, matted, subhyaline threads about 3 mic. in diameter. Spores elliptical, 5 x 10 mic. smooth, subhyaline. Core hard, woody, not attached to the peridium by ligaments.

The species of Mesophellia hitherto known all belong to the same group with greenish gleba, thin endoperidium, and core attached by ligaments. This specimen from C. C. Brittlebank, Mel-

Fig 912

bourne (No. 19) differs in several respects, the gleba color, the free core, and the thick, uniform, hard peridium. If the specimen ever had an outer peridium no trace remains. Excepting as to color, it is about the size and appearance of an Italian chestnut. Our figure (912) shows an outer view, a section with the core and gleba in situ, and the core separate.

EFFETE MATTER.

The following names in this section may be eliminated. Mesophellia ingratissima, Berkeley, no type exists and description is not definite. It was said to be "strongly scented." Mesophellia Scleroderma, Cooke, is Gallacea, with no affinity to Mesophellia. Diploderma glaucum, Cooke = Mesophellia arenaria. Diploderma sabulosum, Cooke, is a Mesophellia. Diploderma pachythrix, Cooke, is a Mesophellia. Inoderma arenarium, Berkeley, was a name change for Mesophellia arenaria which did not take.

THE GENUS DIPLODERMA.

The genus Diploderma was based on the idea of a puff ball that does not open, and we have decided to use the generic name, notwithstanding that the original and most of the proposed species of Diploderma are bulls. (Cfr. Myc. Notes, p. 181.) About a hundred years ago Link proposed the genus Diploderma, basing it on an unopened specimen of Geaster hygrometricus, still preserved at Berlin. Seven species from Australia and one from Hungary have since been added, most of which are unopened Geasters.

It was Cooke, in his Australian Handbook, who brought the "genus" into prominence and disrepute. He defines it as having a "central, woody nucleus," which definition belongs to Mesophellia (see previous genus), not to Diploderma, and then as evidence of the care that Cooke bestowed on his work, after so defining the genus, two-thirds of the "species" he includes do not have "central, woody cores." He includes six species; two are Mesophellias, two are unopened Geasters, and two, D. suberosum and D. album. are immature, but probably good species of something, if they were adequately known. Both have globose spores, but otherwise appear as though they may be cogeneric with Diploderma avellaneum.

The genus, excluding the Mesophellias and unopened Geasters that do not belong to it, could be defined as follows:

Peridium double, the inner usually hard and rigid. Dehiscence none, or at least unknown. Sterile base or central core none. Capillitium hyaline. Spores elliptical or globose, very pale color or hyaline.

This genus, only known from Australasia, is close to Mesophellia, differing in having no central core.

DIPLODERMA AVELLANEUM, FROM C. C. BRITTLEBANK, AUSTRALIA (Fig. 913).—Peridium 1 to 2 cm. in diameter, globose, about the size and color of a hazel nut. Outer peridium thin, closely adnate. Inner peridium thick, hard, woody, white. Gleba pale buff color (near chamois; Ridgway). Columella or core, none. Capillitium scanty, cobwebby, hyaline. Spores elliptical, 5-6 x 8-12, pale ochraceous, subhyaline, minutely warty.

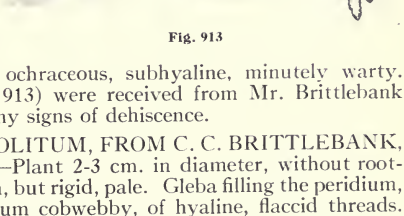


Fig. 913

Two specimens (Fig. 913) were received from Mr. Brittlebank (No. 2). Neither shows any signs of dehiscence.

DIPLODERMA INSOLITUM, FROM C. C. BRITTLEBANK, AUSTRALIA (Fig. 914).—Plant 2-3 cm. in diameter, without rooting base. Exoperidium thin, but rigid, pale. Gleba filling the peridium, pale, rosy color. Capillitium cobwebby, of hyaline, flaccid threads. Spores varying 7-8 x 12-16, elliptical, pale, subhyaline, minutely

rough. Cystidia (Fig. 915) large, thick-walled cells, varying much as to shape, but usually stalked at the base.

The permanent cells found in the gleba are unusual. I have been examining the gleba of Gastromycetes for many years, and I never before noted similar bodies in the ripe gleba. Miss Wakefield, to whom I sent a specimen, suggests that they are cystidia, and I believe she is right. We know that there are species of Gastromycetes such as Secotium, that do have cystidia in the hymenium, and "new genera" are even based on them. But they disappear in deliquescence, and are not found in the ripe gleba. That these bodies in the ripe gleba of Diploderma insolitum are cystidia is probable, but it is strange that they do not disappear like the basidia and hypheal tissue, in deliquescence. As far as I know, there is no other analogous case, excepting perhaps the curious cells of Battarrea. Type from C. C. Brittlebank, Melbourne, Australia (No. 3).

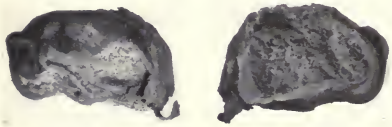


Fig 914

Fig. 915.

DIPLODERMA CASTOREUM (Fig. 916).—Peridium double, about of equal thickness, smooth, fibrous, tough. (Dehiscence?)

Fig 916.
Diploderma castoreum.

Gleba pale, filling the cavity. Capillitium interwoven, hyaline, tortuous threads. Spores elliptical-fusiform, 8 x 16, hyaline, or pale greenish color, rough.

This has a strong, rooting base (Fig. 916), and was named Castoreum radicatum. In its peridium, gleba, capillitium and spore features it agrees with Diploderma, and should be united to this genus. "Puff balls" are not classified by their "roots." It is known from a couple of specimens at Kew collected at St. George's Bay, Tasmania, by G. Wintle. One of the specimens, as shown in our figure, is double, but that is probably not usual. The collector states that the plant is "eaten by kangaroos and bandicoots." We considered this plant in our Lycoperdaceae of Australasia. It must be a rare plant, and probably does not occur in Australia, for it never reached me from any collector.

DIPLODERMA SUBEROSUM.—This was based on an immature specimen (gleba not fully deliquescent), with a thick, pale exoperidium and a thin, black endoperidium, no core, no sterile base. Capillitium scanty, hyaline. Gleba color pale olivaceous. Spores globose, 4 mic. hyaline, very slightly rough. Only known from a specimen collected by Broome, Brisbane, Australia.

DIPLODERMA ALBA.—This is extremely doubtful. It departs from the idea of the genus in having a columella like some unopened Geasters. The type is very immature, the gleba not yet deliquesced. Spores globose, hyaline. We should consider it an unopened Geaster, but doubt if any Geaster, even immature, has hyaline spores. Naturally, it is known only from the type locality, "Cudgegong River, Australia."

EFFETE MATTER.

Diploderma fumosum, Cooke, Australia; Diploderma melasporum, Cooke, Australia; Diploderma Ungerii, Schulzer, Austria; Diploderma tuberosum, Link, Germany, are unopened geasters. Diploderma glaucum, Cooke, Australia, is Mesophellia arenaria. Diploderma sabulosum, Cooke, Australia, and Diploderma pachythrix are Mesophellias, close, if not the same as Mesophellia arenaria.

THE GENUS ARACHNION.

The receipt of a "giant" Arachnion from Miss A. V. Duthie, South Africa, has led us to a review of this curious genus.

The genus can be briefly described as being puff-balls within puff-balls. The entire interior of a ripe specimen is filled, not with dust (spores and capillitium), as most puff-balls, but with a granular substance that feels "gritty" when rubbed between the fingers. These granules are peridioles, little sacks containing spores. They are small, but can be seen under a hand-glass, and even with the naked eye. They are of the color, and appear as if the puff-ball were filled with ashes. The name Arachnion refers "to a spider sac filled with eggs."

The genus Arachnion has always a very thin peridium with a smooth cortex. It breaks irregularly, and is so fragile that it is difficult to keep entire ripe specimens in the herbarium. There is no sterile base. The gleba consists of little granular masses of spores called peridioles, which in the type species are each surrounded with an imperfect web of hyphae, analogous to the capillitium of other "puff-balls," and for convenience called capillitium. In Arachnion rufum, of Australia and in a form of Arachnion album from Brazil, the peridioles are almost devoid of hyphae, almost naked, little balls of spores. The spores are borne on slender sterigmata, which in some

specimens (not species, I think) are partially persistent as pedicels. Usually these pedicels are absorbed in the process of deliquescence, and it is not unusual to note spores in the same specimens with varying remains of the sterigmata.

HISTORY.—Up to last year the known species of Arachnion were really one species, originally named Arachnion album, by Schweinitz, who noted the peculiarities on which the genus rests. It is so small and rare that it is not often collected, but we receive it occasionally from the United States, West Indies, South America, Australia, and South Africa. One correspondent (Miss A. V. Duthie) reports it very common in South Africa (Note 191). In Europe it is known to this day from a single collection sent me in 1905 by Rev. L. Badet, from Salussola, Italy. Last year Miss Duthie added from South Africa a very peculiar species Arachnion Scleroderma (Myc. Notes, p. 538), and now sends a giant species, which was entirely unexpected in this genus of heretofore pigmy puff balls.

ARACHNION ALBUM (Fig. 917).—Peridium smooth, thin and fragile, never opening by a definite mouth, but breaking irregularly, pale in color, pure white when young. Gleba composed of little grains called peridioles, each consisting of a mass of spores surrounded by a few, loose, hyphae threads (capillitium). Spores smooth, globose, 5-6 mic., sometimes with fragments of the persistent sterigmata attached. Gleba

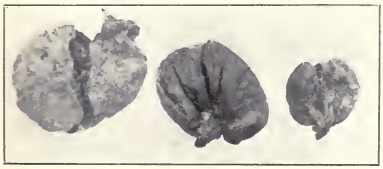


Fig. 917.

Fig. 918.

color in the type form ash gray. Our figure 917 is this plant, natural size. Fig. 918 a section enlarged about six diameters to show the nature of the peridioles.

We gave in Mycological Notes, page 253, the slight variations we have noted in this plant from different localities. They do not merit distinctive names, excepting perhaps as to the following.

Arachnion bovista (Chile), same exactly as Arachnion album, excepting the gleba is brown instead of ash gray.

Arachnion rufum (Australia, M. N., p. 254) is a more robust plant than Arachnion album with a thicker, reddish brown peridium and brown gleba. It is only known from one collection from D. McAlpine.

ARACHNION SCLERODERMA, FROM MISS A. V. DUTHIE, SOUTH AFRICA.—Peridium globose, 1-1½ cm. in diameter, with a strong, rooting base. Sterile base none. Peridium thin, with large, irregular warts on the order of the warts of Scleroderma aurantiacum. Gleba greenish olive. Peridioles irregular, both in size and shape, from globose to narrowly elongated, or obtusely triangular, 60-300 mic. in diameter. Spores globose, or slightly oval, smooth, mostly pedicellate, with slender pedicels; 6-20 mic. long.

In internal characters this is much like Arachnion album, but the peridium characters are so different that I at first took it for a Scleroderma. The only collection is from Miss A. V. Duthie, South Africa. (Cfr. Myc. Notes, page 538, where a figure of the plant is given.)

ARACHNION GIGANTEUM, FROM MISS A. V. DUTHIE, SOUTH AFRICA (Fig. 919).—Plant 5 to 7 cm. in diameter, globose, with a few mycelial roots. Peridium thin, fragile, smooth, dark fuliginous. Gleba ash gray, like grains of sand. Peridioles with rather firm walls, globose or oblong, 200 to 400 mic. in diameter. Spores globose, 8 mic. in diameter, smooth, very pale colored, without pedicels.

Fig. 919.

We have been so accustomed to consider Arachnion as our genus of smallest puff-balls that when we first saw this large specimen (Fig. 919, natural size) we did not believe it would prove to be an Arachnion. It was very fragile, and was largely broken up before we could photograph it. The specimen is from Miss A. V. Duthie, South Africa, and is the second species that she has added to the genus.

THE MESOPODIAL LASCHIAS.

The genus Laschia embraces the gelatinous, poroid species. Most of them are quite small, and sessile or pleuropodial. The mesopodial species are very few, only four being known as follows:

Fig. 920.

LASCHIA STAUDTII (Fig. 920).—Pure white, glabrous, gelatinous. Stipe 1-2 inches long, mesopodial, white, smooth. Pileus convex, smooth. Pores medium, shallow. Cystidia and crested cells none. Spores oblong, 4 x 6 mic. The collection sent by Dr. Cleland is the first made in Australia and the second known. A collection reached Hennings from Kamerun, Africa, and was named as above. It is preserved in alcohol at Berlin, and our photograph

is from the specimen in a jar. Dr. Cleland sent his specimens preserved in formalin, and they are exactly the same as the African collection. Illustration, Engler & Prantl, page 185, very good.

LASCHIA BAUMANNIANA.—Scantily known from the type in alcohol at Berlin. It came from Africa, and is recorded as yellow when fresh. It is same shape, but smaller and more slender than Staudtii. The microscopic features are not known.

LASCHIA CAESPITOSA, FROM DR. J. B. CLELAND, AUSTRALIA (Fig. 921).—Pileus conical, smooth, pale when dry, white (?) when fresh. Stipe slender, mesopodial, caespitose, and coalescent at base. Pores small, angular, very deep and long.

This seems to be a frequent species in Ceylon, Australia, New Caledonia, and New Pomerania, but unknown to me from other

Fig. 921.

Fig. 922.

Eastern countries. It is recorded from Philippines, but I have seen no specimens. Berkeley first got it from Ceylon and named it Favolus manipularis. At that time Berkeley's ideas of the genus Favolus was Laschia of the present day. Afterwards Berkeley modified his view of the genus, and when he received the plant some years later from Australia he called it Laschia caespitosa, a better name for it. In recent years it has been named Laschia gogolensis and Laschia Lauterbackii by Hennings, and Polyporus mycenoides by Patouillard. As it is unique in its long pores, differing in this respect from all other species, it should not have had so many names. It grows caespitose "50 or more" in a clump, it is said, on rotten logs. In general aspect it resembles an Omphalia. Our photograph (Fig. 921) is from the type at Kew, and also (Fig. 922) a section through a pileus (somewhat enlarged) of a specimen sent by Dr. Cleland.

LASCHIA GRACILIS (Fig. 923).—Pileus thin, subgelatinous, pale. Pores minute, white, gelatinous. Stipe mesopodial, slender, smooth, reddish when dry. Cystidia none. Spores (P.) globose, 5 mic. apiculate, hyaline, smooth.

This seems to be the only mesopodial Laschia in the American tropics. It was named Polyporus gracilis by Klotzsch years ago, and as such appears in our Stipitate Polyporoids. Patouillard published it as Laschia clypeata, and only recently Murrill discovered it to be a "new species," and called it Polyporus Cowellii. It is not rare in the American tropics. Rick has collected and distributed it. His specimens show some variations in size of pores, some being larger pored than others.

Fig 923.

LASCHIA (?) SILVESTRIS. Holtermann from Java gives a figure that is probably a Laschia, and probably Laschia caespitosa, but he discovers it to be a "new genus, Van Romburghia," and does not give the essential fact, the nature of the tissue, to decide whether it belongs to Laschia or not. From his imperfect record the classification of the plant is only a guess, but from his figure the plant is probably Laschia caespitosa.

THE EMBRYOLOGY OF LYSURUS MOKUSIN

Phalloids could be divided into two families or "natural orders" on the attachment of the young plant to the volva. We considered this in detail in Myc. Notes, page 512, in connection with young Lysurus Gardneri (there called Lysurus borealis). We have received from L. C. C. Krieger some preserved eggs of Lysurus Mokusin, an introduced phalloid that occurs in the hot houses at Chico, Cal. (Cfr. Myc. Notes, page 586). We present a figure (924) enlarged, of a transverse section through an egg, showing the gleba entirely surrounding the arms, excepting, of course, when the arms are joined to the volva by the umbilical plate. As the embryonic structure of Lysurus Mokusin is exactly the same as that of Lysurus Gardneri, considered in detail in Mycological Notes, page 512, we will not enlarge on it here. A figure purporting to be a section through an egg of Lysurus Mokusin was given in Jour. de Bot., 1890, page 257, but it impresses me as having been an inaccurate conception and presentation of the subject.

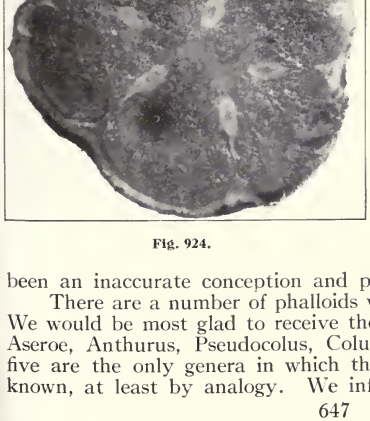


Fig. 924.

There are a number of phalloids whose relations are not known. We would be most glad to receive the eggs of the following genera: Aseroe, Anthurus, Pseudocolus, Colus, and Kalchbrenneri. These five are the only genera in which the embryonic relations are not known, at least by analogy. We infer that the last three will be

found to belong to the clathroid alliance, but the relations of Aseroe and Anthurus are in doubt. It is a simple matter to send phalloid eggs so as to reach me fresh. Pack them in cotton, moistened with formalin, in a glass tube or wide mouthed bottle. I hope those who reside in countries where these phalloids grow, particularly my Australian and South African correspondents, will bear this in mind when they find the eggs.

NOTES ON THE XYLARIAS.

We shall be very glad to receive from any correspondents, particularly from tropical countries, specimens of Xylarias. We have done considerable work on the genus, and have photographs of all the historical specimens we noted in the various museums of Europe. Xylarias will be found abundantly in every locality, usually growing on rotten logs.

Fig. 925

Fig. 926.

Xylaria grammica (Fig. 925). This seems to be a characteristic species, readily known by its striate, greyish black surface. The stipe (2-4 cm. x 3-4 mm.) is black, smooth. Each bears one or usually two clubs (5-8 cm. x 8-10 mm.), usually obtuse, cylindrical. The surface is a thin, dark greyish crust with black lines. Internally, there is a fuliginous stroma (3-4 mm. thick), pithy in the center and finally hollow. In drying the clubs often contract and split. The perithecia are globose, black, arranged in lines. Spores 6 x 12.

Xylaria grammica, originally from South America, is said to be very common. It is recorded from West Indies, Australia, and Africa. We are not assured that the Eastern plant is the same as the American. Our African collection, Xylaria variabilis (cfr. Myc. Notes, page 636), is young. The clubs are more slender, striations not nearly so prominent, and the "bark" is loose and separates from the stroma, which it does not do in the American plant. This African plant is also called Xylaria torquescens. The Australian plant we

do not know, but it was first called Xylaria ectogramma by Berkeley and afterward referred to grammica. Xylaria exalbata, from Ceylon, referred to grammica as a synonym, from our photograph, seems quite different. We present (Fig. 925) a photograph of this characteristic species from specimen received from Dr. J. Dutra, Brazil. Also an enlargement (Fig. 926) to show the nature of the striations.

SPECIMENS.—We have fine collections from Brazil: Rev. Rick (310), Rev. Torrend (394), and Dr. J. Dutra. Also from Angola, Africa, J. Gossweiler, young specimen of Xylaria variabilis.

RELATED SPECIES.

XYLARIA VARIABILIS (cfr. Myc. Notes, page 636).—This is quite close to grammica, perhaps same species. The clubs are more slender, the lines not so prominent, the "bark" separable from the stroma, and on comparison they seem different, though on basis of our immature collection, no just estimate can be made. We have specimens from J. Gossweiler, Angola, Africa.

XYLARIA ZELANDICA, from New Zealand (not Xylaria Zeylanica from Ceylon), is a small species with a slender stipe; said to have large, fusiform spores 10 x 32-35. The figure shows similar lines on the club, but we can not make them out on our photograph of the type.

XYLARIA STRIATA, from China is figured as being about same stature as Xylaria grammica and having similar lines. The clubs are more acute, stems thicker, and spores 5-8 x 15-20. Our photograph of the type, however, does not agree with the published figure by any means.

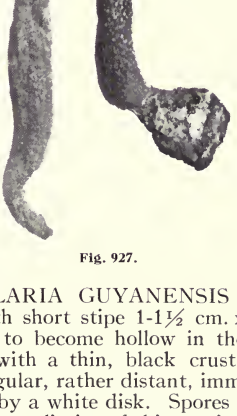


Fig. 927.

Fig. 928.

XYLARIA GUYANENSIS (Fig. 927).—Clubs 3-4 cm. x 6-7 mm., with short stipe 1-1½ cm. x 4 mm., solid, with white stroma, disposed to become hollow in the center when old. When young, covered with a thin, black crust; when old, smooth, even. Perithecia regular, rather distant, immersed in the stroma. Ostioles surrounded by a white disk. Spores 4-5 x 8-12.

The peculiarity of this species, the white ring around the ostiole, was noted by Montagne. The perithecia are also more distant and regular than in most species, and at first the mouths are papillate, viz., covered with a thin crust. The white ring does not show until the crust peels off. We are indebted to Dr. Brenckle for examination

of the specimen that we photograph. Our enlargement (Fig. 928) shows the white ring around the ostioles.

SYNONYMS.—This plant was distributed by Theissen as Xylaria Hypoxylon var. tropica, but it does not seem to be published under this name. It is too obese for X. Hypoxylon, besides, I think the white rings are characteristic of a species. Xylaria exalbata, Ceylon, Berkeley, is surely the same plant, and is marked in same way as noted by Berkeley. Xylaria Neilgherries, a mss. name at Kew, is also same species.

RARE SPECIES OF FUNGI RECEIVED FROM CORRESPONDENTS

CALVATIA CRETACEA, FROM PROF. JOHN DEARNESS, CANADA (Fig. 929).—Plant globose, 2-3 inches in diameter. Sometimes with a short, rooting, sterile base. Cortex a thick, furfuraceous coat, which breaks into pyramidal warts and finally largely disappears. In some specimens the cortex is much less developed than shown in our photograph. Peridium breaking irregularly in dehiscence. Gleba dark, purplish brown. Spores globose, 5-7 mic., apiculate, distinctly rough, with small, echinulate points. Capillitium rigid, interwoven, threads 5-12 mic. in diameter, mostly 8-10, usually broken in short pieces, deep colored.

Fig. 929.

This is a peculiar *arctic* species, only known from extreme northern regions. It first reached Berkeley, collected by Captain Feilden, on Bellot Island, August 14, 1876. Bellot Island is up near the North Pole somewhere. Berkeley named it Lycoperdon cretaceum, and published it in his usually imperfect way (1878) in his account of the fungi of the Arctic expedition. It is the only collection at Kew, and as will be seen from our photograph (Fig. 929), is in good condition. We fail to see any application of Berkeley's name and are much tempted to use the later and better name.

In 1914 I received fine specimens of the plant from Thore C. E. Fries, collected in Lapland, where it is said to be very common in the mountains. Mr. Fries sent it under the name "Calvatia borealis, n. s.," which I advised him was correct (cfr. Letter No. 49), as I had overlooked the specimen at Kew. I do not know that he ever published it. The several specimens from Mr. Fries showed marked difference in the cortex, the warts of some specimens of same collection being much smaller. Also the sterile base though scanty, is evident in some and absent in others. In 1910 there was published and figured in the Fungi of Denmark Expedition to Greenland, under the name Calvatia arctica, a plant that, from the description, is doubtless the same species. I have never seen the figure. It was collected in East Greenland, Lat. 77 degrees. The main description accords, though there are a few discrepancies from the plant as I know it, viz., "Spores yellowish. Capillitium rarely 7½ mic. in diameter." We believe it will prove to be the same plant, described from not fully matured specimens.

The specimens from Prof. Dearness were collected at Kay Point in the Arctics, August, 1914. It is the fourth collection known.

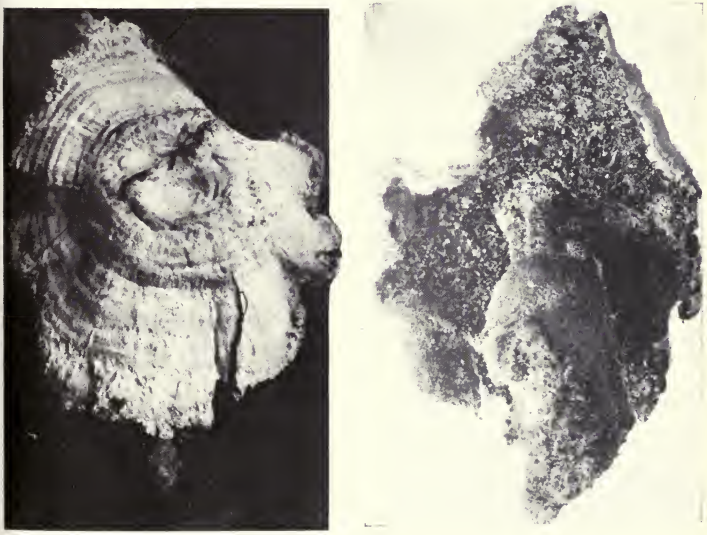


Fig. 930.
Polystictus arenicola.

POLYSTICTUS ARENICOLA, FROM CHAS. H. BAKER, FLORIDA (Fig. 930).—Pileus 6-8 cm., broad, surface snow white,

as if whitewashed, faintly zonate, with raised zones, context very thin, ferruginous. Pores small to medium, ½ cm. long, with ferruginous tissue and mouths. Stipe mesopodial, ferruginous, short, two to three cm. long, abruptly bulbose at base. Setae none. Spores (Fig. 931) abundant, narrowly oblong, 4 x 12 mic., very pale colored, smooth.

Fig. 931.

This plant grows in the sand. It is very striking in the strong contrast of the snow white surface and ferruginous context. At first I considered the possibility of its being decolored specimens of some other species, for we know that the related Polystictus perennis often has a decolored surface, due to age and exposure to light. But no other similar species has same spores. Polystictus Montagnei, which is the closest and agrees in tissue, color, and general stature, has spores 7 x 10, much broader, and differs essentially in shape. We would class the plant in Section 17a of our Stipitate Polyporoid pamphlet, and were we rewriting it we would remove Polystictus Montagnei to same section.

The plant could be named dealbatus most appropriately, but unfortunately the name is occupied by a species not very suitable to the name. There is now a Polystictus arenicolor, and some one may wish to change this on that account. However, "sand dwelling" and "sand color" are entirely different ideas, and it is not practical to select names in all cases "fool-proof," so we will let it go.

Mr. Baker is fortunate in finding this novelty, for unnamed Polyporoids (excepting Porias) are rare nowadays in the United States.

POLYPORUS GLOBOCEPHALUS, FROM REV. TORREND, BRAZIL (Fig. 932).—Pileus hemispherical, about 1 cm. broad, fleshy, white. Surface smooth. Flesh soft, white. Stem mesopodial, black below, white above. Pores minute, decurrent on the stem. Cystidia none.

Fig. 932.

This is the first Melanopus I have seen with hemispherical head. I would class it in Section 49, though it differs from all others in this section. On account of the soft flesh, it might go in Section 44 of Ovinus, but these little plants would not be sought in Ovinus. Rev. Torrend sends a specimen in formalin, from which our photograph and description are drawn. It would not be possible to give a description from the dried specimen.

MYCOLOGICAL NOTES are published on very liberal terms. Read the subscription price on page 638. We should be glad to receive specimens in payment for subscription, particularly from those residing in tropical countries. Every one should aid in this work. Address C. G. LLOYD, 224 West Court Street, Cincinnati, Ohio. (United States.)

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 47.

CINCINNATI, O. APRIL, 1917.

PROFESSOR EDWARD ANGUS BURT.

UNIVERSITY OF CALIFORNIA
AT LOS ANGELES
JAN 2 0 1942

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

PROFESSOR EDWARD ANGUS BURT.

We hold Prof. Burt to be one of the few really earnest, scholarly men at work on American mycology. To his specialty, the Thelephoraceae, he has given years of careful and close study. The Thelephoraceae, particularly the resupinate species, demand the most patient application and labor. The recent use of the microscope in this field has made of it a new world. The old workers, with scant material and superficial examinations and their obsessions for "new species," made a mess of it. Not a quarter of the species were named, and of those named, few could be identified. Our species are no doubt mostly the same as those in Europe, but no one had any way of knowing what those in Europe are, much less those of this country.

Fifteen or perhaps twenty years ago, Prof. Burt spent a season in Europe, studying such specimens as he collected, or found at Kew or Upsala. It is to be regretted that he did not go to Leiden, the home of Persoon's specimens, where are to be found the "real" types of many of these species. I have not much sympathy with the idea, now "legal," of starting with Fries, particularly in the cases where he did not get Persoon's species right, and there are many cases of this kind among the resupinates.

Prof. Burt has been slow in publishing, and it is only in the last two or three years that we have had much benefit from his studies. We trust that his work will not be interrupted, until finished. In our opinion, the resupinates will never be a very popular study, as long as they involve as much work as at present, sectioning each specimen. We think the study can be made more practical, but that is for the future.

Prof. Burt and Bresadola are, we believe, the only two con-

scientious "priorists" living. This very quality, indeed, has led Bresadola into many illogical conclusions as to the names he uses, and judging from Burt's troubles with "Septobasidium pedicellatum," he will meet the same difficulty. "Use," in my opinion, not "priority" alone, is the natural law of all languages, and the man who holds to the contrary is in the same position as the man who would refuse to employ the word "December," because it is not now the tenth month.

Prof. Burt is a very careful, safe, conservative man, a thorough scholar, a patient worker, a graduate of the best mycological college in our country (Harvard), and he is working on the most difficult problem existing in connection with American mycology. We have always felt it to be most fortunate that a man of his character became interested in this work, for he will undoubtedly place it on a safe and permanent basis. And he is not only the first, but he is the only man who knows, or for that matter, has ever known, anything about resupinate Thelephoraceae in this country.

POLYPORUS ANCEPS, FROM JAMES R. WEIR, MONTANA (Fig. 933). We take this in the sense as named by Mr. Weir, for with him it is a common plant on hemlock, and I have never been able to decide a name for it. This is a white, hard plant with a "reddish tendency" (section 84). I have always doubted it being anceps, for I noted no "reddish" change on the type. But as it grows on hemlock, and answers well the description, I think it best to take Peck's name in the sense of Weir. The most prominent character is the way it affects the host, the peculiar "rot" shown in our figure 934. We gave in Note 499 a synopsis of the similar and related species, but they are very puzzling and as yet are not all straightened out.

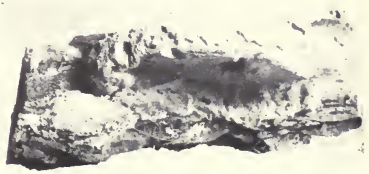


Fig. 933.

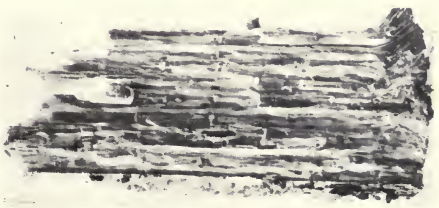


Fig. 934.

CYTIDIA CORNEA, FROM MISS A. V. DUTHIE, SOUTH AFRICA (Figs. 935 and 936). Dried plant discoid with recurved margin, 8-10 mm. in diameter, pale flesh color. Tissue hard, horny,

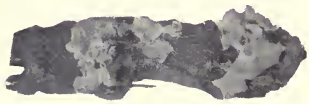


Fig. 935.

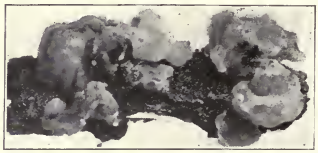


Fig. 936

cuts with difficulty. When soaked it is pure white, firm, with smooth, shiny hymenium on upper surface only. Context white, firm. Basidia clavate, hyaline, with long sterigmata. Spores globose, large, 14-16 mic., pale yellowish tint, surface uneven. Context hyphae hyaline, slender, similar to the hyphae of a Tremella. Cystidia crested.

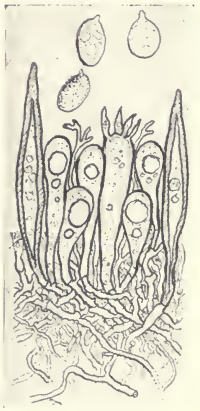


Fig. 937.

It is customary nowadays to refer to Aleurodiscus all Thelephoraceae with large spores and basidia. This is not a Thelephora in fact. It is neither cartilaginous nor fleshy, but subgelatinous with such firm texture that gelatinous does not express it, but it swells on absorbing moisture, and the hyphae are same nature as gelatinous plants.

It is quite embarrassing to refer this plant to any established genus. It lies between Cytidia and Aleurodiscus. The hymenial structure is of the latter, the gelatinous tissue that of the former. It is neither in fact. I was inclined towards Aleurodiscus, but I sent the plant to Rev. Bourdot, and he decides on Cytidia. To include it in either genus, the limitation of the genus must be stretched. Our figure 935 represents the dried specimen as received from Miss Duthie. Figure 936 is same after it is soaked out. We present a figure (937), kindly prepared by Rev. Bourdot, to show its hymenial character. It will be noted that it has the large spores, basidia and crested cystidia of Aleurodiscus. Crested cystidia are chiefly known in Aleurodiscus. They are called "dendrophysen" by the Germans, "hyphes paraphysoïdes" by the French.

POLYPORUS (AMAUR.) INFULGENS, FROM REV. C. TORREND, BRAZIL (Fig. 938). Pileus with a dull surface, color of applanatus. Stipe pleuropodial, concolorous. Context pale.

Fig. 938.

Fig. 939.

Fig. 938, Polyporus infulgens. Fig. 939, Polyporus dorsalis.

Pores minute, round, with white mouths. Spores globose, strongly rough, reticulate, 10 mic.

We were at first disposed to refer this to Polyporus subrenatus, named from a single specimen from British Honduras which has the same spores. On a recent visit to New York we compared them and they are not possibly the same. The leading features, however, the dull, non-laccate surface, the pale context, and particularly the globose, reticulate, strongly rough spores which are exceptional in this group of plants, are the same. These peculiar spores only found in one other related species, are not mentioned in the original "description" of Polyporus subrenatus. Both species belong in Section 6a (Amaurodermus) of our Stipitate Polyporoids.

POLYPORUS (GAN.) DORSALIS, FROM REV. J. RICK, BRAZIL (Fig. 939). This corresponds to Pol. lucidus, excepting in the stipe insertion which is dorsally attached. Pol. lucidus never has a stipe attachment like this. As lucidus, it is a "light weight" species. Polyporus fornicatus has the same shape and attachment exactly (cfr. Stip. Pol. fig. 398), but is a "heavy" species, that is, it has minute, heavy, hard pores, and belongs to a section corresponding to "Ponderosus" in our Fomes pamphlet (section 74, page 269). On form alone, both are same, but in nature of pores they are quite different. The stipe is much longer than our figure, which is taken to show the stipe attachment.

While our figure of Polyporus dorsalis (939) has a close resemblance to the figure of Polyporus infulgens (938), they are quite different plants. Polyporus dorsalis belongs to Section Ganodermus with strong laccate surface and truncated spores. Polyporus infulgens belongs to Section Amaurodermus with dull surface and globose spores. Polyporus dorsalis is probably best held as a form of Polyporus lucidus, but I believe the stipe attachment is of more importance than most characters on which species are based.

GUEPINIA PEZIZAEFORMIS, FROM J. B. CLELAND, AUSTRALIA (Figs. 940 to 942). We are very much pleased to receive this little species from Dr. Cleland. It is the first we have

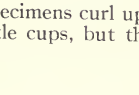


Fig. 940.

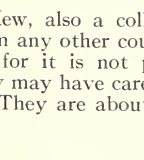


Fig. 941.

gotten. It is scantily represented at Kew, also a collection from Australia at Berlin. It is not known from any other country. Guepinia pezizaeformis is not well named, for it is not pezizaeform. The dried specimens curl up and Berkeley may have carelessly taken them for little cups, but they are not. They are about same form

as the little Polyporus pusillus (Rhipidium) attached by a lateral point, and the hymenium on the under side. The color described as "red" is yellow or perhaps orange yellow, with far more yellow than red. It is a typical Guepinia with the hymenium inferior, furcate basidia, and hyaline unilateral spores, 6 x 12-14, guttulate, and probably septate in germination. The color resides in a cortical, palisade layer of cells, quite distinct from the hyaline tissue of the plant. I do not recall any other tremellaceous plant with a similar, distinct, cortical layer of bright colored cells. Cooke's figure (96) in the Handbook has no resemblance however remote to either size or shape of plant. He no doubt drew it from his imagination, drawing his picture to suit the name. Our figure 940 represents the dried plant, natural size; 941, a single specimen soaked out and enlarged; and 942 several specimens partially soaked. The little plants curl up and roll inward in drying, and only take the flattened form after prolonged soaking.

Fig. 942.

FAVOLUS EUROPAEUS (?), FROM J. E. A. LEWIS, JAPAN. (Fig. 943.) It has always appeared to me strange that I have never gotten Favolus from Japan, and the genus is not recorded from Japan. It is a common genus with us, and not rare in the alpine regions of Europe. Favolus europaeus was considered and illustrated on page 18 of our Polyporoid issue. We have over a hundred collections of it from the United States. When fresh it is of a bright color, with a thin cuticle, which peels off as it gets old, and then the plant becomes white. This specimen from Mr. Lewis is white, with no evidence of ever having had a colored cuticle. Of course, I cannot state that it ever had a colored cuticle, but I assume that it did, in which case it is Favolus europaeus. If it were always white then it is unnamed I think. As to shape, texture, pores, it is the same as we sometimes find Favolus europaeus here. I hope our Japanese correspondents will watch out particularly for Favolus. I believe that Favolus europaeus must grow in Japan for it is common with us in America and occurs in Europe. It cannot be mistaken from our photograph of the pores. Just a few days ago, I received from M. Gono, Japan, a specimen of Favolus, which was so badly eaten I could not venture as to its species, but it was not Favolus europaeus.

Fig. 943.

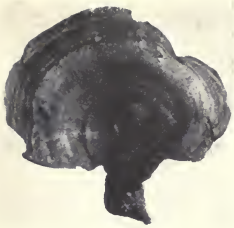


Fig. 944.

POLYPORUS MOLLERIANUS, FROM J. E. A. LEWIS, JAPAN (Fig. 944). This is the stipitate form of Polyporus vinosus, same exactly as to color, context, pores, etc., but spathulate and stipitate (cfr. Apus Pol., page 342). Originally it was from Africa, and we have heretofore only seen African specimens. It is a new record in Japan. We have previously gotten, however, the usual form of Polyporus vinosus from A. Yasuda, Japan.

ISARIA, FROM J. E. A. LEWIS, JAPAN (Fig. 945). On Melolontha Japonica, as named by Mr. Lewis. Not many of the Isarias have specific names, and they should not have, for most if not all of them are preliminary stages of a Cordyceps. There are good grounds to suspect when one finds an Isaria on an insect, that the same host develops a Cordyceps. We know of no Cordyceps on Melolontha in Japan. We have in the United States a Cordyceps called Cordyceps Melolonthae, and it is our largest species. With us this is developed from the larva, not the perfect insect. We hope our Japanese correspondent will specially watch for a Cordyceps on Melolontha.

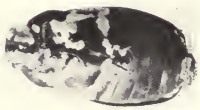


Fig. 945.

Fig. 946.

STEREUM ELEGANS IN JAPAN. FROM J. E. A. LEWIS, (Fig. 946). This specimen is so much more rigid and firm that we are very much in doubt as to the reference. Also it seems to grow from the earth laterally, not with a central root as illustrated on page 598, Mycological Notes. Also the pileoli are not as distinctly stalked as usual.

Stereum elegans, that our Stereum pamphlet, proves to be a had not crystallized into anything definite until we wrote frequent species in the East. It was originally from Surinam. We have specimens as follows:

Australia, 14; India, 1; Ceylon, 3; West Indies, 3; South America, 2. We have also a small but typical collection from A. Yasuda, Japan (Fig. 947). While the plant from Mr. Lewis is different from the usual plant, it will probably prove in time to be due to conditions of growth.

Fig. 947.

POLYPORUS VOLVATUS, FROM J. E. A. LEWIS, JAPAN (Fig. 948).—A fine collection. Forty years ago Peck named this unique thing, although it is common now in sections of the United States, and a number are in our museum. It is also found in China and Japan. We have it from Prof. A. Yasuda, Japan. By comparing the photograph of the Japanese specimen (Fig. 948), sent by Mr. Lewis, with our photographs of the American plant (Myc. Notes, Polyp. Issue, page 25) it will be noted that they are absolutely the same in every respect. It should open the eyes of those who look upon fungi as "local" and mostly "new species" when a species as unique as this occurs in the United States, Japan, and China. Other wise it is not known in any country. A full account of the plant was given in our Polyporoid Issue, No. 2, page 25.

Fig. 948.

CANTHARELLUS PALLIDUS, FROM A. YASUDA, JAPAN (Fig. 949).—Pleuropodial, fleshy, spathulate, or lobed, thick, with obtuse gills. Color described when fresh, very pale, almost white. Specimens now discolored. Spores 4 x 8 mic., hyaline, smooth.

Two specimens were received. One was lobed, as shown in our photograph, the other slender, and but little enlarged above, resembling in a general way Clavaria pistillaris. Our figure made from a dried specimen soaked out of course does not give a correct presentation of the plant such as a photograph of a fresh specimen would.

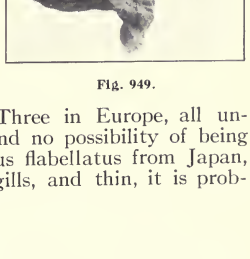


Fig. 949.

Pleuropodial Cantharelli are very rare. This is the first we have ever gotten. Eight are listed in Saccardo. Three in Europe, all unknown to me except from illustrations, and no possibility of being this plant. Berkeley named a Cantharellus flabellatus from Japan, but as he described it as having narrow gills, and thin, it is prob-

ably not this species, which is thick, fleshy, and has obtuse gills. I never looked up the type. The two American species by Schweinitz, one, C. viridis is unknown from any specimen, and from description is probably not a Cantharellus; the other, C. olivaceus, is a Paxillus. The last species in Saccardo Cantharellus ramealis, from Java, is a Guepinia. In addition, there is a species of pleuropodial Cantharellus, which has been named as Craterellus as follows:

CANTHARELLUS PARTITUS. This is a thin, small plant about a cm. growing on wood. It is only known from an old type, at Kew from "New Ireland." It is black now, probably discolored in drying. I believe it to be misnamed "partitus" for it is not parted. It has never been recognized since named and probably never will be.

"TREMELLA" MYCETOPHILA, FROM S. H. BURNHAM, NEW YORK (Fig. 950).—This is really a fungus without a name. It is not rare, always found on Collybia dryophila. Peck called it Tremella mycetophila, but it is only a Tremella in general resemblance. The texture is not tremellose and it has the ordinary clavate basidia in both characters entirely foreign to a Tremella. Burt in 1901 proposed to put it in the genus Exobasidium, although about as different from the other species of Exobasidium as it is from a Tremella. In his latest writings Burt excludes it from Exobasidium as he now considers it "a teratological production of Collybia dryophila induced by protracted wet weather during development of the frutification." Hence he leaves it without a name at all. We do not claim to know anything about what it really is. We only know it is not rare in this country and that it does not occur in Europe, and that Collybia dryophila as well as "wet weather" are both common in Europe. It looks like the same conditions would produce the same effect on the same plant in both countries.

Fig. 950.

Daisy M. Hone had an extended article on this plant in 1909. She found it forming large masses on the pileus and stems of the Collybia. She considers it "a true parasite." If Burt's theory is correct, it is an exceptional case. We have sometimes noted evident teratological development of Agarics forming abortive pilei on top of the normal pileus like the celebrated Poria agaricicola that a German savant discovered on Amanita (cfr. Myc. Notes, page 459). But we think there is no other case where an Agaric habitually develops an entirely different and constant fruiting form, in addition to the normal gills.

POLYPORUS LUCIDUS (ABNORMAL), FROM JAMES R. WEIR, MONTANA (Fig. 951).—We present a figure of this ab-

Fig. 951.

Polyporus lucidus (abnormal)

normal specimen of Polyporus lucidus from a photograph sent by Mr. Weir. It shows what a strange shape a plant will take under some abnormal conditions. Of course our figure shows only the shape, for the specimen was many times larger, measuring more than a foot and a half long.

Fig. 952.

Strobilomyces pallescens.
(Top of pileus.)

STROBILOMYCES PALLESCENS, FROM REV. J. WILSON, AUSTRALIA (Fig. 952).—This is evidently the most frequent Strobilomyces in Australia, and the only species known from other than the "type locality." It is a very characteristic plant and will readily be known from our photograph of the top of the pileus showing the peculiar scales. The plant has elongated spores, hence not a Strobilomyces in the original sense, but the subject was fully covered in our note No. 82. In the United States we have but one common species, Strobilomyces strobilaceus, and in Australia the common species is Strobilomyces pallescens. It is curious, however, that in the United States, there is but one collection known of the common Australian plant (cfr. Note 322 when carelessly published as Strobilomyces pallidus).

COLUS HIRNUDINOSUS (?), FROM J. B. CLELAND, AUSTRALIA (Fig. 953).—This may be Colus hirnudinosus, but there is some doubt. Cooke gives it in the Handbook, and a good figure (for he copied from Montagne). There is no specimen on which to base it at Kew. From this dried specimen it does not seem as clathroid as Colus hirnudinosus, but I believe it is the same thing. I should like very much to have a photograph of this Australian plant made from fresh specimens. If it prove that Colus hirnudinosus does occur in Australia, it is of great interest, for at present it is only known from the Mediterranean region.

Fig. 953.

POLYSTICTUS BRUNEO-LEUCUS, FROM J. B. CLELAND, AUSTRALIA (Fig. 954).—This is the first specimen I have ever gotten, and the only other collection known to me is the type at Kew. We present a photograph of the type (Fig. 954). It was from Tasmania. The character is the thin, rigid, glabrous brown pileus and usually the contrast of the white (or greyish) pores. This contrast, however, is not shown in this specimen, which appears to be old and discolored. Polyporus bruneo-leucus has notably larger pores, but otherwise exactly the same as Polystictus planus (cfr. Note 358), a rare plant of the United States and Europe. I have a feeling that they are the same thing, merely geographical pore variations, but until the small pored plant comes from Australasia we would maintain both names. Polyporus bruneo-leucus was published by Berkeley in 1845. Fries lists it in Nov. Symb. 1851, as bruneo-albus, either a slip of the pen or an unwarranted change. Saccardo compiles it under Fries' name, though what reason Fries had to change it, if done intentionally, I do not know.

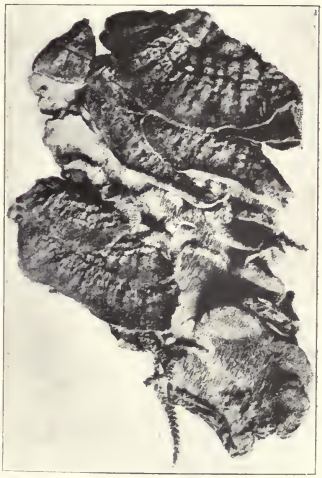


Fig. 954.

STEREUM ZONARIUM, FROM J. B. CLELAND, AUSTRALIA (Fig. 955).—Pileus sessile to a reduced base, thin, rigid. Surface smooth, reddish brown (Brussels Brown Ridgway), with

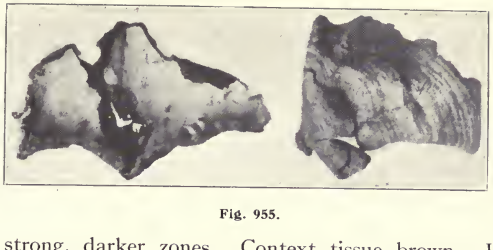


Fig. 955.

narrow, strong, darker zones. Context tissue brown. Hymenial layer white, distinct from the context layer, and often but partially developed over the surface. Basidia clavate, forming a palisade layer. Cystidia none. Spores 3 x 5, hyaline, smooth.

Stereum with smooth pilei are very rare. In fact, we know but one other well authenticated, viz., Stereum versicolor, in its true sense. (Cfr. Note 53, Letter 44, and Note 159, Letter 53.)

STEREUM INSOLITUM, FROM FRANK T. McFARLAND, KENTUCKY (Fig. 956).—Pileus ungulate, spathulate, with a short stipe rooting in the ground. Surface pale, gray, striate. Hymenium dark, cinereous. Cystidia none. Spores globose, 4-5 mic., smooth, hyaline.

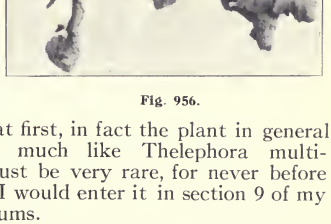


Fig. 956.

We have two species, Stereum Sowerbyi and Stereum Burtianum, both rare, and both close to this, though usually mesopodial and also differ in the color of the hymenium. The adustus hymenium suggests a Thelephora at first, in fact the plant in general appearance is much like Thelephora multipartita. It must be very rare, for never before sent to me. I would enter it in section 9 of my Stipitate Stereums.

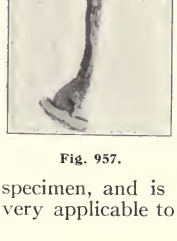


Fig. 957.

FAVOLUS SQUAMIGER, FROM REV. J. WILSON, AUSTRALIA (Figs. 957 and 958).—We doubt very much if this is the same as Berkeley named, but it is better to give an old indefinite name a meaning than to propose a new name. Favolus squamiger is known only from the old type at Kew, a mesopodial specimen, and is probably only arcularius. However, the name is very applicable to this plant, and as it is very close to arcularius, it

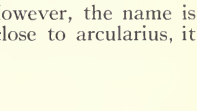


Fig. 958.

seems well to so apply it. This specimen is pleuropodial, with exactly same pores as arcularius, and with little fasciculate squamules on the pileus. It is evidently a rare thing. The spores about 3 x 6, a little smaller than arcularius. It is a true Favolus for me, and so is arcularius in reality, although classed as Polyporus.

LENTINUS TUBER-REGIUM, FROM J. B. CLELAND, AUSTRALIA (Fig. 959).—We do not adopt Berkeley's name Lentinus Cyathus for the Australian plant, for, as will be developed later, we doubt if there is more than one species of Lentinus which develops from a sclerotium, and in that case it will take the older and better known name Lentinus Tuber-regium. Our photograph (Fig. 959) tells the whole story, and there is no need to describe it. In the original description Berkeley makes no mention of the sclerotium, merely referring to the "rooting base," though, if our memory serves us right, the sclerotium is preserved on the same sheet at Kew. There have been six species of Lentinus described that have sclerotia, viz., Lentinus Tuber-regium. Amboy Rumphius (1750); Lentinus Cyathus, Berkeley, Australia (1879); Lentinus scleroticola Samoa, Murray, 1886; Lentinus flavidus Africa, Massee, 1901; Lentinus Woermanni Cohn Africa, 1891; and Lentinus radicosus, New Caledonia, Patouillard, 1902. In our opinion, they are all the same. Ramsbottom (1913) holds that there are three valid species, viz., Tuber-regium, Cyathus and scleroticola, stating that they "are quite distinct from one another," but what the difference is he does not state and we do not know. We have specimens in our museum from Africa, Australia, and Samoa of this plant, and on comparison there is no material difference. There may be some difference in the sclerotia. We cannot say, as we have only a sclerotium from Samoa, but we doubt it.

Many years ago (1750) before plants had specific names, Rumphius published a crude figure from the East Indies showing six agarics growing on what seems a piece of earth, but which Rumphius says is a tuber. The plants he calls "Boleti," the tuber "Tuber-regium," as he probably thought they were different, though he states that the "tuber" produces the "boleti." Fries named Rumphius' figure Lentinus Tuber-regium, although Fries never saw a specimen. The plant seems fairly common in Africa, Australia, and Pacific Islands, but no specimen reached Europe for more than a century. Berkeley got it from Australia (1879), together with a tuber, if we mistake not, but if we are correct in our memory, he overlooked the little matter of it having a sclerotium. Hennings got it from Africa, and good specimens are at Berlin. Hennings failed to discover it was a "new species," which is strange but true. I also remember seeing fine collections at Leiden. I have no notes, but I believe they were from Java. The other specimens (mostly) that I have seen, viz., at museum at Paris named by Patouillard, British Museum named by Murray, Kew named by Massee, Germany named by Cohn, I think are all the same, although each author "discovered" something "new" about them, if nothing else a "new" name.

Fig. 959.

Lentinus Tuber-regium.

The original crude figure shows six specimens from the tuber, and on the fine figure recently published by Ramsbottom, there are eight. We found the plant several times in Samoa, mostly with a single fruit from each sclerotium, in one instance two. We had an idea that this was the difference between the Samoan plant, and Tuber regium, but all the specimens we have noted in the museums have one, or at the most, two fruits, and we believe the several fruits from one sclerotium is an unusual development. Our photograph, made from a specimen at Kew from Africa, shows one fruit and young ones just starting.

SARCOXYLON LE RATI, FROM J. B. CLELAND, AUSTRALIA. (Fig. 952.) This grew from an underground tuber and was named Squamotubera Le Rati by Hennings (in 1903) from New Caledonia. It is very similar in several respects to the more frequent Sarcoxylon compunctum originally from Java, but which also occurs in Australia and was well figured in Cooke's Handbook (fig. 196). I found the latter abundantly in Samoa, growing on fallen tree trunks, particularly where they had lodged off the ground and were not much decayed. Sarcoxylon Le Rati is a rare plant, heretofore only known from New Caledonia. Patouillard got it also from New Caledonia and considersd it a "transformation" of Sarcoxylon compunctum. Surely that is wrong. Plants that normally are globose and grow usually pendant from tree trunks, do not "transform" into cylindrical club shape plants growing erect from sclerotia buried in the ground. I hope Dr. Cleland will send me some of the sclerotia and also more mature specimens for the specimens sent are the conidial state and very immature.

Fig. 960.

In Cooke's Handbook, page 287 is a short account of "Xylaria gigas?" growing on "stumps &c." New South Wales. It has been omitted in Saccardo. Possibly it is Sarcoxylon Le Rati but until more is known about it and its habits nothing can be decided.

Cooke made his usual bull as to the genus Sarcoxylon which he proposed, and described the perithecia as membranaceous. They are carbonous and the genus is close to Xylaria. Indeed since Junghuhn (1838) figured the curious "Sphaeria compuncta" from Java there has been constant discord as to its generic classification. Montagne and Fries put it in Hypoxylon, Berkeley in Xylaria, and Saccardo in Penzigia. I think it is further from Penzigia in the type idea than from either of the others.

T. S. BRANDEGEE

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 48.

CINCINNATI, O. JUNE, 1917.

DR. J. BARTON CLELAND.

UNIVERSITY OF CALIFORNIA

JAN 2 0 1942

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street. - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

DR. J. BARTON CLELAND.

We present this month the photograph of Dr. J. Barton Cleland, probably the most active worker in the Australian mycological flora. In a private letter he writes that it is very difficult to reach definite conclusions regarding the Australian fungi, particularly the fleshy agarics. Literature concerning Australian species, and particularly Cooke's Handbook of Australian Fungi, is so inaccurate and imperfect, as to make research in that direction exceedingly discouraging. Species of polypores, puff balls, tremellaceous plants and other fungi that retain their characters, when dry, can be identified by sending them to some one who has made comprehensive and comparative studies in this direction, but it is not possible to classify agarics from dried specimens. The only practical thing for Dr. Cleland to do with the Australian fungi, in our opinion, is to determine as many as possible from Fries' Hymenomycetes and the illustrated books of Europe, describe as new species those he has been unable to determine, and then issue a practical handbook of the Australian species, on the plan of Peck's monographs. This method will at least give the Australian workers names for their agarics, which is the first step, and one of great advantage. General workers, such as myself, may help with advice, but the real work on a local flora must be done by local observers. Dr. Cleland is a very liberal contributor to the Lloyd Museum, and we feel that the publication of many notes, based on the specimens received from him, has added much to our knowledge of Australian fungi. Such publications, however, do not have the practical value of a systematic work based on field observation, such as we hope Dr. Cleland will publish. We are very glad to help in the development of local fungus floras, but the **real** work must be done on the ground. We are particularly glad to see Dr. Cleland taking such an active interest in the study of the Australian mycological flora. He is exceedingly active in his work, and has written numbers of articles. He has worked over the phalloids of Australia, and so far as Australia is concerned, has brought the subject of phalloids into very good condition.

THE GENUS CYTTARIA.

The receipt of specimens, both dried and in preservative, of two South American species from Marcial R. Espinosa, Chief of the Cryptogamic Section of the National Museum, Santiago, Chile, has induced us to revise the species of this curious genus. It is known only from Australasia and southern South America. We gave a notice of the Australasian species in Mycological Notes, page 578, and there made the erroneous statement that the South American species were all solid. We gathered that from the illustration, but the specimens on hand show that we were mistaken.

The genus Cyttaria was published by Berkeley (Trans. Linn. Soc., Vol. 19, 1841), and based on specimens brought by Darwin from Terra del Fuego. They grow there in great quantity in the "beech woods" on trees that are much diseased. The Cyttaria is a parasite, and causes large excrescences and deformation of the wood which bear the fungus. In the Cryptogamic Museum at Harvard there are fine specimens of these excrescences, on exhibition, that were collected by Dr. Thaxter. The fungi are gathered and eaten by the natives, but their substance is tough, and from accounts are not very palatable, but the primitive races of this region eat most anything. In his original account Berkeley described and figured the two following species.

CYTTARIA BERTEROI (compiled in Saccardo as Cyttaria Berterii) was described by Berkeley in his original account of the genus. He did not find the spores. His figure looks much like his figure of Cyttaria Darwinii, th only distinction he was able to point out is that the cups' mouths have lacerate remains of the pore coverings. We would not hold that of much importance, but Spegazzini distinguishes it from Cyttaria Darwinii by the same characters and smaller spores 5-6 x 15, and reports it as rare. Monsieur Hariot did not find it. The color is bright orange.

CYTTARIA DARWINII, FROM M. R. ESPINOSA, SANTIAGO (Fig. 992).—This is the original species from the extreme south of Chile. Mr. Espinosa does not give the locality, but I presume they grow in the neighborhood of Santiago. How far north the species extends I do not know.

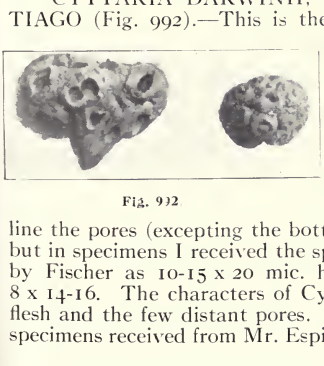


Fig. 992

As shown in our photograph it is a hard, globose body when dry, with distant pores. The color is bright orange when fresh. Asci line the pores (excepting the bottom of the pores) in a palisade layer but in specimens I received the spores are immature. They are given by Fischer as 10-15 x 20 mic. hyaline, smooth. By Spegazzini as 8 x 14-16. The characters of Cyttaria Darwinii are its thick, tough flesh and the few distant pores. We present photographs of the two specimens received from Mr. Espinosa. One is a young specimen with

Fig. 993.
Cyttaria Darwinii (in situ)

the pore mouths covered. The pores open, but the exact manner is not stated in any of the accounts. We present also a photograph that we made in the Museum at Paris, of a cluster of young fruit, as they grow on the branch. These were brought from Cape Horn by Monsieur Hariot.

CYTTARIA GUNNII (Fig. 994).—This is the Australasian species, named by Berkeley in 1848. It is the only species known except from South America, and it is only known from New Zealand and Tasmania. It is quite similar to the above two species, hard and heavy when dry, but the pores are closer and still separated by thick walls. The color of the dried plant is white, but when soaked is pale

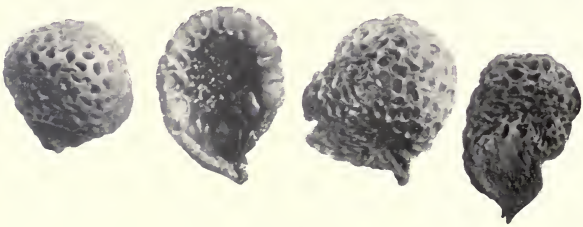


Fig. 994.
Cyttaria Gunnii.

yellow, which is the color when fresh. When fresh it is evidently much paler color than the preceding species. The spores are globose, 10-12 mic. hyaline, smooth. We gave an account of the species in Mycological Notes, page 578. We have specimens from W. A. Scarfe, H. W. Laing, R. S. Robinson and one unknown contributor, all from New Zealand.

CYTTARIA HARIOTII.—This is a white species, very similar in appearance to the New Zealand species. It was collected by Monsieur Hariot at Cape Horn, and described and figured by Fischer from specimens he saw in the Museum at Paris. It is evidently rare. The difference between it and Cyttaria Gunnii appears to me only a spore difference. The spores are cuboid, 10 mic. in diameter. The figure was reproduced in Engler & Prantl. We failed to note the specimens when we were in Paris.

CYTTARIA ESPINOSAE (Fig. 995).—In the specimens from Marcial R. Espinosa, we find a species quite different from those heretofore known. The others are hard and heavy when dry, with thick flesh and distant pores and thick dissepiments. This is light and thin, with contiguous pores and very thin dissepiments. We do not know the color of the fresh specimens, but it soaks out light pink, and was probably orange when fresh. The coloring matter is contained only in the epidermal cells. In size and shape it is similar to the others, globose, with a short, tapering base. The pores are contiguous, with very thin walls in which feature it differs from all other species. A palisade layer of asci and paraphyses line the sides of the

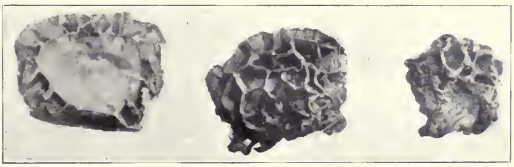


Fig. 995.

pores, but not the bottom of the tubes. The interior of these specimens is filled with a light, pithy substance, and it is the only species that we have examined where the pith is found in old specimens. All others we have seen are hollow, though, no doubt, pithy when young. The spores are hyaline, elliptical, smooth, and in this collection probably immature. Those I found were about 5 x 8 mic. I presume the specimens were collected by Mr. Espinosa in the vicinity of Santiago, Chile.

Fig. 996.
Cyttaria Hookerii.

The preceding species are all similar in many features, but the following is so different in shape and arrangement of the pores that a "new genus" has on two occasions been suggested, but not proposed.

CYTTARIA HOOKERII (Fig. 996).—This little species was named and figured by Berkeley from Cape Horn in 1847. We reproduce the figure, also a section (Fig. 997). We think the figure is so characteristic, there can be no trouble in recognizing the plant, although his description calls for "cups" and the figure does not show "cups," but cavities. The plant is evidently very abundant at Cape Horn and so reported by both Hariot and Spegazzini. The latter states that the "loculi" are first closed then lacerate, dehiscent. He describes the spores as elliptical, 10 x 15 mic. and the color of the fresh plant as yellowish cinnamon.

Fig. 997.

Synonyms.—Cyttaria Purdiei, figured by Buchanan from New Zealand, is surely Cyttaria Gunnii.

Cyttaria Reichei from Chile, as figured and described by Hennings, was based evidently on a large specimen of Cyttaria Darwinii.

Cyttaria disciformis, named by Léveillé from Chile, is said to be not a Cyttaria, though if anyone knows what it is he has not stated.

RESUME.—We present below photographs of the three species we have in our museum, which show at a glance the difference on which they are based.

Fig. 998 is Cyttaria Espinosae, Fig. 999 is Cyttaria Gunnii, and Fig. 1000 is Cyttaria Darwinii. The following appear to be the principal facts as to the genus, as far as known. It occurs only in New Zealand, Tasmania and southern South America. It grows only on the native beech or Nothofagus as now classed. Two

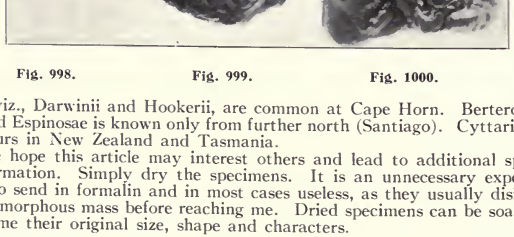


Fig. 998. Fig. 999. Fig. 1000.

species, viz., Darwinii and Hookerii, are common at Cape Horn. Berteroi is rare there, and Espinosae is known only from further north (Santiago). Cyttaria Gunnii only occurs in New Zealand and Tasmania.

We hope this article may interest others and lead to additional specimens and information. Simply dry the specimens. It is an unnecessary expense and trouble to send in formalin and in most cases useless, as they usually disintegrate into an amorphous mass before reaching me. Dried specimens can be soaked, and will resume their original size, shape and characters.

DESIDERATA.—We should like to know how the cups open. They are closed at first, but is it by an operculum that falls off each cup as one piece, or is it a membrane that peels away from the whole fruit?

LOST LOCALITY.—Berkeley states that a specimen of a Cyttaria is in Delessert's herbarium, as coming from Reunion about 140 years ago. Berkeley thinks it is an error of location. Attention, you who are lucky enough to live in Reunion.—Does this genus grow with you?

NOTES ON XYLARIAS

We continue our consideration of foreign Xylarias, and trust that those residing in tropical countries, particularly, will collect and send us such as they find.

Xylarias are abundant everywhere, especially in the tropics, but the species are less known than those of most any other section of mycology. They grow usually on wood, sometimes in the ground, and may be known at sight, being black, carbonous plants that can not be mistaken. If you will look around you will find many Xylarias.

XYLARIA SCOPIFORMIS, FROM J. A. STEVENSON, PORTO RICO (Fig. 1001).—Clubs slender, with an acute point 4-5 cm. long, 2 mm. broad, fragile, almost entirely carbonous, with scanty, white stroma (or none). Usually simple, rarely branched. Stipe filiform, 1-1½ cm. with a small pad of dark pubescence at base. Perithecia partially imbedded, forming a nodular, moniform club. Spores 5 x 10 rarely 6 x 12.

This seems frequent in American tropics. We have it abundantly from Cuba. We take for it the only sure name we know and our figure is from the type. It was distributed by Kunze and cited by Montagne, though we believe not formally described under this name.

Fig. 1001.

SPECIMENS.—Stevenson, Porto Rico (3483); Torrend, Brazil (384); Lloyd, Cuba (54); Rick, Brazil (408); Mousset, Java (39).

SYNONYMS.—Xylaria caespitulosa, Cesati from his type at Kew although Cooke's figure (127) has not the most remote suggestion of it. It is probable that the old Xylaria tuberosa, named by Persoon from the Gaudichaud voyage, is the earliest name, but the type is young and doubtful. It also has a forked club and Xylaria scopiformis is usually simple. It is also probably Xylaria gracillima of Fries' description, but not as understood by Berkeley and Montagne. It was included in Thiessen's work as a variety, tuberosa, of Xylaria Hypoxylon, the varietal name taken from Persoon and for me no form of Xylaria Hypoxylon. Xylaria inaequalis, Berkeley, the cotype at Paris which seems correct, is this plant, although, unless I have made some error in my photographing, there is some confusion as to the specimens so labeled at Kew.

XYLARIA PARTITA, FROM J. A. STEVENSON, PORTO RICO (Fig. 1002).—Stem simple or branching, or as in specimen photographed with the club, proliferous. Clubs ½ to 1½ cm. long, 1 mm. thick, black, fragile, nodular, with a filiform, smooth stipe. Spores 5-6 x 10-12.

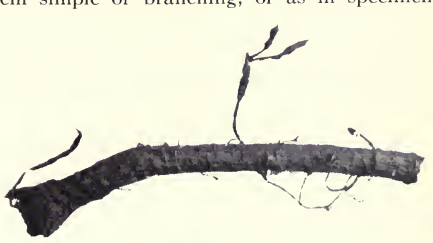


Fig. 1002.

We have concluded that we will name and label the specimens of Xylaria for which we are unable to find names, and not fill our museum with unnamed specimens as we have in the Polypores. We have a feeling, however, that Xylaria partita is only a branching, proliferous form of Xylaria

scopiformis, with which it agrees in the slender, fragile, nodular clubs and spores. It appears to be same as Theissen figures as Xylaria carpophila var. luxurians, attributed to Rehm, but it does not agree either with Rehm's figure or spores.

XYLARIA APICULATA, FROM JOHN A. STEVENSON, PORTO RICO.—Clubs black, ½-1 cm. long, apiculate, rarely obtuse. Surface with fine, raised lines. Stipe black, filiform, about 1 mm. thick, smooth, varying much as to length, ½ to 4 cm. Spores mostly 6 x 12-14 rarely up to 24 mic. long, when young with a large gutta; when old with an indistinct septum.

This is a common plant in the American tropics. Our illustration (Fig. 1003) is the usual size, but it varies much as to length, both as to stipe and clubs. Usually it is simple, rarely there are two clubs on the same stem, and more rarely a stem bears four or five little fasciculate clubs. The real character of the species is the raised lines on the clubs, as shown in our enlargement (Fig. 1006). We take a name for the plant proposed by Cooke and the type photograph seems to be same as our figure 1003. It is the most suitable name, though originally the type is from New Zealand and described as having

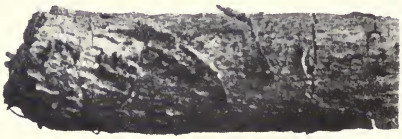


Fig. 1003.

Fig. 1004.

Fig. 1005.

Fig. 1006

larger spores than the American plants usually have. We think it is same species, however. It is probable that Xylaria trachelina, named by Léveillé from West Indies, is the same plant, from description, but we have found no type.

We do not question but that the following were based on the same plant:

Xylaria hypoxylon var. mucronata, as Berkeley labeled a specimen at Kew. It has no relation to Xylaria hypoxylon and the name

mucronata can not be used, as it certainly is not Schweinitz's plant so illustrated (in Letter 64, Fig. 985), although nothing is known of Schweinitz's plant excepting his figure. Cooke gives a good figure under the name Xylaria mucronata, but he gets his idea from Berkeley's plant and his name from Schweinitz. Berkeley never connected the two.

Xylaria Zealandica is very similar as to clubs, and Cooke emphasizes the lines on the clubs, but describes the spores as 10 x 32-35, which is very much larger than in the American plant. Probably it is the same species. It is the only similar species where these lines have been noted in the description. Theissen evidently considers it a simple form of Xylaria arbuscula, as named by Saccardo from some adventitious plants in a hothouse in Italy. In the original sense this is a much larger plant with multiplex, fasciculate clubs, and I think it is not proven that it takes simple forms like this. The spores in the American plant are mostly 12-14 mic. long. A few we note 16-18 mic. and we saw one spore over 24 mic. It is evident that the exact size of Xylaria spores is not important. Species based on spore size alone are not of much value when one can find spores less than 12 mic. and more than 24 mic. on the same slide.

XYLARIA THEISSENII (Fig. 1007).—Stem long, 7-10 cm. slender, smooth, 1-1½ mm. thick, rooting at base (from the ground). Club short 1-1½ cm., tipped with a slender, filiform apex. Perithecia partially imbedded, or almost free, forming a tubercular club. Spores 9-10 x 24-28.

Fig. 1007.

This is a rare plant only known from Brazil. We have seen only Theissen's exsiccata (No. 235), kindly loaned us by Dr. Brenckle. Theissen labels it, and includes it in his work as the second form of Xylaria Thyrsus, but it has no analogy whatever to Xylaria Thyrsus, known only from Java and India, and which has no carbonous crust, but an entirely white, fleshy stroma, and is in fact not a Xylaria. Nothing like "Xylaria" Thyrsus is known from Brazil. In general appearance Xylaria Theissenii approaches Xylaria filiformis, but is a larger plant with much larger spores. We did not break the specimens, and we do not know, but we think probably that, like Xylaria filiformis, it has no white stroma at all.

If we were revising the genera of the large Pyrenomycetes, we should propose a "new genus" for "Xylaria" Thyrsus for it is entirely out of place in the genus Xylaria. If this were done, those who depend for determinations on the "literature" would not make the mistake of referring to the species a true Xylaria.

XYLARIA GRACILIS, FROM MARCIAL R. ESPINOSA, CHILE (Fig. 1008).—Stem slender, smooth, rarely simple, usually branched, bearing three or four clubs. Clubs 1-1½ cm. long, acute, 2-3 mm. thick, fragile. Stroma white, well developed. Perithecia partially imbedded, forming a tubercular club. Spores 6-7 x 20.

Fig. 1008.

We saw but one other Xylaria in the museums that branches near the base, bearing several clubs, viz., Xylaria Gardneri, which has no relation to this. Cooke figures two other such species, viz., Xylaria caespitulosa and Xylaria rhizomorpha, but both were purely fanciful, the types having simple unbranched stems. Theissen (t. 10, fig. 4) figures what appears to be this plant under the name Xylaria fasciculata, but there is nothing in the original of this description to indicate that it is branched. Xylaria gracilis was named in manuscript by Klotzsch (cfr. Sacc., Vol. 1, p. 317), and the type, all heretofore seen by me, is at Kew. It is an old collection by Humboldt from South America.

XYLARIA CONCURSA, FROM MARCIAL R. ESPINOSA, CHILE (Fig. 1009).—Stem branching and bearing one or two fertile clubs and one or two conidial clubs. Clubs 1½-2 cm. by 3 mm. cylindrical, even, acute, or rounded at the apex. Perithecia imbedded, not protruding. Stroma white, scanty. Spores 6-7 x 14.

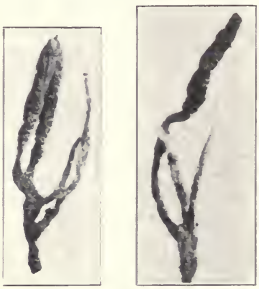


Fig. 1009.

I know but one other species that branches at the base in this manner, viz., Xylaria gracilis (cfr. above), which has rugulose, not even, clubs. There is no other species I believe that bears conidial and ascigerous clubs or separate clubs, but concurrent. Still it is possible that Xylaria gracilis and Xylaria concursa are different stages of the same species.

XYLARIA TUBERIFORMIS, FROM J. B. CLELAND, AUSTRALIA, as named from New Zealand. Spores 8 x 16 described as 25 mic. We present Fig. 1010 the type, also Fig. 1011, specimens from Dr. Cleland which show that it is not always "tuberiform." Xylaria clavulus as illustrated by Cooke seems the same plant, but the type has no resemblance to it. Xylaria globosa, named by Fries as Hypoxylon, and described by Rehm as Xylaria, is the same to the

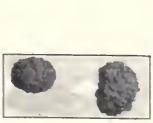


Fig. 1010.

Fig. 1011.

eye, but has narrow spores 6-7 x 18-24. Xylaria haemorrhoidalis from Ceylon, also similar to the eye, has very large spores, 10 x 25-40. We have a suspicion that Xylaria tuberiformis will finally be found to be depauperate Xylaria castorea.

THE GLAUCESCENSE OF HEXAGONA PORES.

From some freshly collected specimens of Hexagona speciosa, recently received from P. van der Bijl, South Africa, I solved what was to me a mystery when I wrote the Hexagona pamphlet (cfr. page 4); why some pores of Hexagona are glaucescent and others are not. The glaucescence is the hymenium. It is probable I would have found that out before if I had taken the trouble to section the pores. The hymenium of brown Hexagonas of the tropics seems to be developed irregularly or perhaps disappears from old specimens. I have eight specimens of Hexagona Pobequini, mostly old, and only a few pores of one specimen are glaucescent.

A section shows the white hymenium forming a uniform layer over the brown hyphae tissue. It consists of a palisade layer of obtuse club-shape basidia, in the specimen examined apparently young basidia, for I found no sterigmata nor spores, and each had a large, globose nucleus, suggestive of young basidia.

RARE OR INTERESTING PLANTS RECEIVED FROM CORRESPONDENTS

PSEUDOCOLUS ROTHAE, FROM J. B. CLELAND, AUSTRALIA.—We present a photograph (Fig. 1012) of the dried specimen which gives some idea of the plant, but a photograph of the fresh plant is much desired. We present also a photograph (Fig. 1013) of the same species dried, from A. Yasuda, Japan.

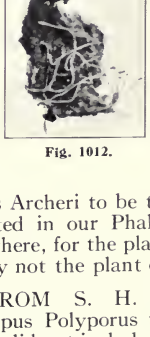


Fig. 1012.

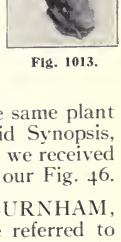


Fig. 1013.

In this connection we call the attention of our Australasian friends to the fact that the following phalloids, well authenticated in these countries, have never been satisfactorily illustrated and that photographs of the fresh plants are specially desired, Pseudocolus Rothae, Pseudocolus Archeri and Clathrus pusillus.

Dr. Cleland considers Pseudocolus Archeri to be the same plant as Anthurus aseroeformis, as illustrated in our Phalloid Synopsis, Fig. 46. There is a discrepancy somewhere, for the plant we received from W. G. Gardner (Note 86) is surely not the plant of our Fig. 46.

POLYPORUS PALUSTER, FROM S. H. BURNHAM, NEW YORK (Fig. 1014).—In our Apus Polyporus we referred to this plant incidentally on page 383, but did not include it in the body

of the book, as it was doubtful to us. Mr. Burnham's collection first locates it definitely. Polyporus paluster is a pure white plant and dries white. The surface is rather smooth, the flesh hard and the spores about

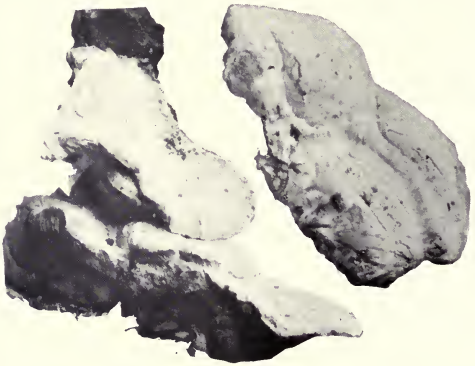


Fig. 1014.

3 x 10, are cylindrical, mostly pointed at both ends. It grows on pine and is quite close to Polyporus albidus (on Abies) in Europe, but differs as noted above, and chiefly in its larger spores. We are very glad indeed to locate definitely another species in this puzzling white Apus section.

STEREUM SENDAIENSE, FROM PROF. A. YASUDA, JAPAN (Fig. 1015).—As named by Yasuda, I believe it is a good species. I find nothing in my photographs or notes like it. To the eye it is the same as Stereum membranaceum, a common plant of the tropics, same color and habits. But the "structure" is different. It has

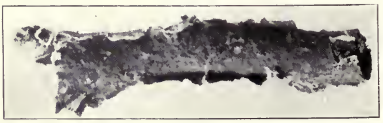


Fig. 1015.

no metuloids. A section shows a very loose, hyaline basal layer on which reposes a more compact and thicker, hyaline layer (the hyphae bearing abundant conidia) and a thin, colored, hymenium layer. I do not make out basidia nor spores. Surely the basidia are not in a palisade layer like the usual Stereum. If some day it should turn out to be an "Eichleriella" like Stereum Leveillianum I should not be at all surprised. That is one advantage of modern classification. no one but a basidial expert can tell the genera now with any security. If one does not find basidia in his specimen, and on certain classes of plants they are very difficult to find, he can no longer refer them to a genus even. The old fellows were not bothered with that, and the new ones are having their troubles. Witness the case of Bresadola with "Radulum Kmetii" or Burt with "Septobasidium spongiosum"

or Patouillard with "Thelephora Schweinitzii." We do not undervalue microscopic features in classification, but we are firm believers in the saying "N'abusez pas du microscope."

POLYSTICTUS PHAEUS, FROM PROF. A. YASUDA, JAPAN (Fig. 1016).—Pileus rigid, thin, sessile, or subresupinate. Surface dark, mummy brown, velutinate, zonate. Context brown. Pores relatively large and shallow, ½ mm. with thin edges. Setae none. Spores (hyaline) not found.

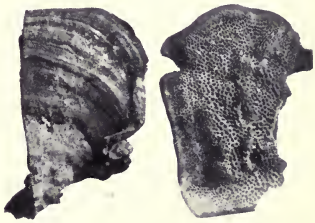


Fig. 1016.

This is quite close to Polystictus phocinus of Ceylon. Same general color context and surface, but pores much larger. While I think it is best classed as Polystictus it could be called Hexagona with as much reason as Hexagona variegata is so called. In fact, the plant is close to Hexagona variegata. (Cfr. Hexagona pamphlet, page 12.) I believe its best classification is with Polystictus phocinus and caperatus. Similar species with brown context are not many. One was recently named from Japan, Polystictus umbrinellus, but as it is described as glabrous, I judge it is not the same as this. Of course, I do not know that this is phaeus, which is not known in the flesh, but it answers the description, and we might as well use the name. It has the same color, surface and pores as Léveillé described, and the relatively large pores are unusual.

PTYCHOGASTER JAPONICUS, FROM PROF. A. YASUDA, JAPAN (Fig. 1017).—White, soft, fleshy, growing on the bare ground. Tissue of large, irregular, rigid fibrils, which project, forming pubescent nodules. Conidial spores not found.

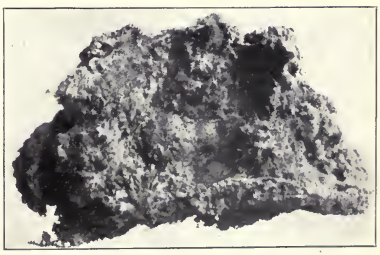


Fig. 1017.

Ptychogaster (cfr. Myc. Notes, Polyporoid Issue, page 30) is not an autonomous genus, but a modification of Polyporoids, and the species should not be named excepting for convenience in keeping them in the museum. This plant is very similar to Ptychogaster albus (cfr. l. c.), but is entirely different in habits (on ground) and also form. The absence of conidial spores (usually so abundant in Ptychogasters) throws doubt on its "genus," but probably they are not formed in the specimens, which appear to be young.

PSORA CRENATA, FROM MRS. JOSEPH CLEMENS, TEXAS (Fig. 1018).—Determined by Prof. Bruce Fink. When I first saw it I thought it was a very novel fungus, but when I sectioned it I found it was a lichen. I sent it to Prof. Fink, who is our best authority on the lichens, and he determined it as above. I often receive lichens for fungi, and can usually tell them at a glance, but this one deceived me. It grew on the bare ground, and its general resemblance to a fungus is very close. We apologize to our readers for presenting in "Mycological" Notes a figure of a lichen, but the species may puzzle others, as it puzzled me.

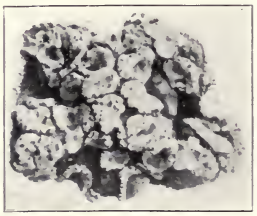


Fig. 1018.

IRPEX SAEPIARIA, FROM DR. J. B. CLELAND, AUSTRALIA (Fig. 1019).—Resupinate with reflexed pileus. Pileus coriaceous, dark brown (Brussels) smooth. Context concolorous. Teeth dense, 2-3 mm. long, concolorous, irregular. Hymenium white. Setae densely covering the teeth, projecting 20-30 mic. Spores globose, 5 mic., smooth.

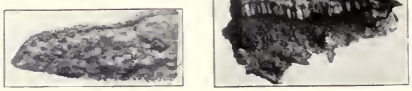


Fig. 1019

In Mycological Notes, page 633, we noticed a very similar plant, Irpex iyoensis from Japan. To the eye they are much alike, but the setae characters are different. There occurs in the Handbook a record of Irpex tabacinus, an American species, in Australia. The probabilities are the record was based on this same plant, but Irpex tabacinus, while somewhat similar, is quite different. All these plants belong to a section of Irpex corresponding to "Hymenochaete." There is no "generic" name for this section now, although they are included with others under the generic term "Hydnochaete." We considered this "genus" in Myc. Notes, page 559, but there restricted it to species with granular or tubercular hymenium.

PHYSALACRIA INFLATA, FROM REV. C. TORREND, BRAZIL (Fig. 1020).—We gave in Myc. Notes (old Spec. Series, page 4) a full account and history of this unique and rare little species. We are much pleased to have it come in to us from Brazil. I believe the plant has been reported from the Philippines, but I have only heretofore known it from the United States.

Fig. 1020.

There has been recently a species (Physalacria rugosa) named from Brazil, which I judge from the description is the same as our United States' species.

TREMELLA FUSCA, FROM REV. C. TORREND, BRAZIL (Fig. 1021).—Cerebrine, reddish brown, 2-3 cm. in diameter. Basidia globose, with brownish contents, mostly cruciately divided, 12 mic. in diameter. Spores narrow, obovate, tapering to the base, hyaline, 4-5 mic. broad at upper end, 10-12 mic. long.

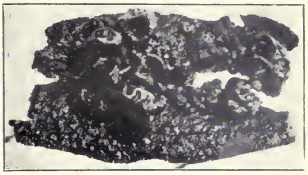


Fig. 1021.

The tremelloid plants that grow in the tropics are particularly desired. The temperate region species are very well known, but little has been done on the tropical species. Moeller wrote on the Brazilian species, and his work was so well done that they may be recognized, which is something that can rarely be said about mycological work. I hoped to find this species in Moeller, but I did not. The only brown species he records are Tremella auricularia and Tremella frondosa (the latter under the name juggle, Tremella undulata) and both differ in form (foliaceous) and spores (more globose). In fact this is the only Tremella I have met with narrow, obovate spores. Most Tremellas have subglobose, or at the best, pear-shaped spores. Moeller has named a number of tremellaceous plants from Brazil, and described and figured them so that they may be recognized. We should like very much to get them in our museum.

TRAMETES STOWARDII, FROM DR. F. STOWARD, W. AUSTRALIA (Fig. 1022).—A form of lilacino-gilva. This is the same plant as described in our Fomes pamphlet, page 226, as to context and other features, but the surface is so strongly rugose that it is entitled to a name as a form. We present Fig. 1022, the upper surface of Trametes Stowardii, and in contrast Fig. 1023, Trametes lilacino-gilvus, the usual species in Australia with pink context. The photographs do not show the contrast that the specimens do.

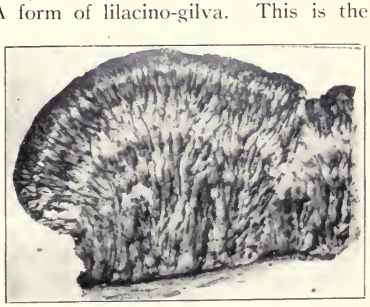


Fig. 1022.

Fig. 1023

TRAMETES FEEI IN AUSTRALIA.—On going over our specimens we note one which we received from E. Cheel (No. 8), with an even pileus. This is Trametes Feei of the American tropics. It is rare in Australia, and we were under the impression it was replaced by Trametes lilacino-gilva, but we shall have to revise our views now. Mr. Cheel's specimens can not be told from the Brazilian plant. The two species are very close. The Australian, in addition, usually has larger pores, but that is only relative. Trametes Eucalypti, of our Fomes pamphlet, should be deleted. It is surely only Trametes Feei.

POLYPORUS MEGALOPORUS, FROM J. B. CLELAND, AUSTRALIA (Fig. 1024).—Pileus suborbicular, 2-3 cm., laterally attached by a short stipe-like base. Color pale alutaceous. Surface with patches of brown branched hairs. (Fig. 1025.) Context and

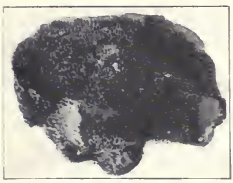


Fig. 1024.

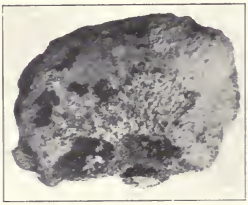


Fig. 1025.

pore tissue pale alutaceous. Pores large, round or slightly elongated, about ½ mm. in diameter. The pore mouths bear brown branched setae, shown in Figs. 441 and 442 of our Stipitate Polyporoid pamphlet. Spores 6 x 12, cylindrical, elliptical, hyaline, transparent, guttulate, smooth.

If I were revising my Stipitate Polyporoids I would remove to one section those species which are characterized by the peculiar, branched setae shown in the figures cited. Although these peculiar setae are the most prominent features of several species (or forms), they were never considered or apparently noted until my pamphlet appeared.

On receipt of this specimen I was disposed to give it a name on account of its pale color and small size, but on comparison with other specimens of Polyporus megaloporus I find it is too close to be held as distinct. The species is usually much larger and of a darker color. In addition, I find I have a previous specimen from F. M. Bailey, Brisbane, which is typical. I have the species now from Henri Perrier de la Bathie, Madagascar, Rev. J. Rick and Gustavo Peckolt, Brazil, F. M. Bailey and Dr. Cleland, Australia. I only noted one collection in all the museums of Europe, which is the type at Paris.

T. S. BRANDEGEE

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 49.

CINCINNATI, O. JULY, 1917.

CAROLUS SPEGAZZINI

UNIVERSITY OF CALIFORNIA
AT LOS ANGELES

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street. - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

CAROLUS SPEGAZZINI

En présentant ici à nos lecteurs le portrait de Carolus Spegazzini, nous regrettons de n'avoir que quelques notes personnelles à y ajouter. Spegazzini a depuis plusieurs années publié de nombreuse travaux sur les champignons de l'Amérique du Sud qu'il étudie spécialement. Avant de venir en Amérique il avait aussi fait paraitre plusieurs études sur la mycologie d'Italie, son pays d'origine. Depuis il s'est surtout attaché aux espèces qu'il considérait comme nouvelles. Suivant nous toutefois, cette façon d'étudier une région déterminée ne peut aboutir à des résultats permanent. C'est un fait désormais bien reconnu que les fungi du monde entier appartiennent à des espèces dont la distribution géographique a une immense étendue; il est devenu très difficile d'etablir si l'on à affaire à une espèce vraiment nouvelle a moins de connaitre parfaitement les espèces analogues des autres régions. Une simple description permet rarement de bien identifier une espèce et tout mycologiste qui croit avoir decouvert une "nouvelle espece" devrait se faire une règle absolue d'obtenir une bonne représentation par croquis ou cliché de l'espèce en question et de l'ajouter à ses notes; de la sorte d'autres mycologistes pourront juger en connaissance de cause de la valeur de la decouverte. Plusieurs des "espèces nouvelles" identifiées par Spegazzini sont vraiment telles, nous n'en avons nul doute; mais il se peut aussi que plusieurs ne le soient pas et nous n'avons nul moyen de contrôler ses conclusions.

Si Spegazzini avait la bonne pensée d'envoyer une série de ses nouveaux specimens soit a Kew, soit à toute autre institution du genre en Europe ou en Amérique, nous sommes convaincus que tout mycologiste s'empresserait d'adopter les noms par lui donnés aux espèces d'un mérite reconnu. Quelques échantillons des nouveaux champignons de Spegazzini sont parvenus en Europe et on peut les voir dans une des collections d'exsiccatae de Balansa. · C'est à peu près tout ce que l'on connait d'une façon certaines des découvertes de Spegazzini. Spegazzini, semble t'il, considére ses travaux comme

de peu d'intéret pour tout autre mycologiste que ceux d'Amérique du Sud. Qu'il se détrompe. Comme nous l'avons déjà dit, les fungi Sud-Américains ne différent guère de ceux du reste du globe; les espèces vraiment endémiques sont relativement rares; en conséquence elles seraient fort intéressantes à connaitre.

Cinq mycologistes de renom se sont occupés des champignons spéciaux à l'Amérique du Sud: Berkeley, Patouillard, Hennings, Moeller et Spegazzini, et tout ont donné des noms spécifiques aux nouvelles espèces qu'ils ont cru reconnaître. Les trois premiers ont envoyé aux musées d'Europe des spécimens qui y sont soigneusement conservés et catalogués sous les noms donnés par ces auteurs. Ces noms sont désormais acquis et continueront d'avoir cours bien que probablement Spegazzini en ait fait la découverte antérieurement et leur ait déjà donné un tout autre nom spécifique. La nomenclature de Spegazzini eut eu un droit certain de priorité si les mycologistes d'Europe et d'ailleurs avaient le moyen de reconnaître ses espèces. Seul Moeller en publiant ses études sur les fungi Sud-Américains a pris la peine d'y ajouter des croquis et photogravures qui permettent de les identifier. Il serait fort a désirer que son exemple fut généralement suivi.

NOTES ON XYLARIAS

We continue our consideration of foreign Xylarias and trust that those residing in tropical countries, particularly, will collect and send us such as they find.

Xylarias are abundant everywhere, especially in the tropics, but the species are less known than those of most any other section of mycology. They grow usually on wood, sometimes in the ground, and may be known at sight, being black, carbonous plants that can not be mistaken. If you will look around you will find many Xylarias.

XYLARIA PLEBEJA, FROM T. HUNTER, AFRICA (Fig. 1026).—This agrees with the cotype at Kew which was from Borneo. For me it belongs to the polymorphum section of the genus with solid, white stroma and rugulose surface. Its character is its caespitose habits and small spores 5-6 x 10-12. I can not agree with Thiessen's interpretation of Xylaria plebeja, when he applies it to a *hollow* plant of the same caespitose habits and spores. I think the strongest character for grouping the Xylarias is the nature of the stroma. Xylaria plebeja is close to Xylaria castorea of New Zealand in its spores and stroma, but differs in its habits. We present figure 1026 of the specimen from Mr. Hunter. Our photograph of the type at Kew could hardly be told from this figure.

Fig. 1026

XYLARIA CLAVUS, FROM J. P. MOUSSET, JAVA (Fig. 1027).—Plant 1-3 cm. high, with a dull, black surface: capitate tapering to the base, sometimes with slender stipe. Context solid, white, firm. Perithecia imbedded, near the surface of the head only. Spores 7 x 20-22, dark, rather acute at the end.

Fig. 1027.

We have had this among our unnamed Xylarias for several years, and have concluded to name it in connection with Daldinia angolensis, which it resembles in shape. This is, however, a true Xylaria with white, hard, fleshy context. It resembles a nail, hence the name. Fries named from Brazil in 1830 a Sphaeria Clavus which is now included in Kretzschmaria and must not be confused with this plant.

DALDINIA ANGOLENSIS, FROM T. HUNTER, AFRICA (Fig. 1028).—This is the first time we have received this species, or have seen specimens. It was figured fifty years ago by Currey from Angola, Africa (cfr. note 473), and named Hypoxylon angolense. It was compiled in Saccardo, Vol. I, as Daldinia angolensis, but Cooke arranged it in Rhopalopsis and later Saccardo changed it into the latter genus under the name Kretzschmaria. He had better have left it where it was. Both Saccardo and Cooke were guessing, and Saccardo made the best guess. It is a typical Daldinia as to spongy, zonate context, and Daldinia rests on this character. It is the first species, however, of Daldinia where the stipe is strongly distinct from the fruiting portion. Daldinia vernicosus has a stipelike base, but not strongly distinct. The plant is capitate, tapering to the base, and in shape resembles a round headed nail. The surface has a black, shiny crust. The texture of the stipe is hard, black, carbonous; of the head is soft, spongy, greyish, with a zone of harder black tissue beneath the perithecia, which are imbedded near the surface of the head. Spores are 6-7 x 12-14, obtuse, dark, when young paler and guttulate. We present a figure 1028 natural size and 1029 enlarged. As far as known, this species only occurs in tropical Africa. We have, very rarely, in our southern United States a similar plant (externally), known as Xylaria Cudonia, which may prove to be the same species. (Cfr. Letter No. 64, page 3.)

Fig. 1028.

Fig. 1029.

PHOTOGRAPHS OF PHALLOIDS

We are pleased to publish a new photograph of a new (?)phalloid received from C. A. O'Connor, Mauritius.

PSEUDOCOLUS MAURITIANUS (Fig. 1030).—We present a photograph of an interesting phalloid received from C. A. O'Connor, Mauritius. There were no notes as to color with it, but it was no doubt red. The photograph, which was made from the fresh speci-

Fig. 1030.

men by D. d'Emmercy, is so characteristic that it will permanently fix it, and we hope others will find it and confirm it. Mr. O'Connor, who is leaving Mauritius shortly on military service, writes me that specimen will be delivered to my English address.

We propose a new name for it, although we have a suspicion that the plant now has three names.

Pseudocolus Mauritianus has five columns united by connecting arms at the top. It belongs to the clathroid alliance, and has a general relation to Clathrus Treubii (Phal. Syn. Fig. 72), of Java.

Pseudocolus rugulosus (Phal. Synopsis, Fig. 67), with three columns directly united at top, is known only from a very old drawing at Kew (from Java), and it may be same species.

Pseudocolus fusiformis (Phal. Synopsis, Fig. 68), known only from an old drawing at Paris from the neighboring island of Reunion, may be a crude and inaccurate conception of the same species.

Pseudocolus Javanicus (Phal. Synopsis, Fig. 66), known only from Penzig's drawing and based on a single specimen from Java, has three arms directly united at top, but may be same species. It appears much smaller, however, though the figure cited is enlarged twofold.

It is impossible to state from these old, vague figures what the plants really are. The phalloids of the tropics are gradually, by the aid of photographs, reaching a definite and permanent status, and everyone who aids with a good photograph of a rare form adds to real knowledge. The main trouble with the phalloid subject is to interpret the crude and inaccurate figures of the past.

It is the duty, we believe, of the staff of all Botanical Gardens in tropical countries to have a series of photographs of the phalloids prepared. Even if they are not directly interested in mycology, they should aid by photographing the curious phalloids when they are noted growing. Only by this means will a final, accurate knowledge of the subject be attained. We shall be glad to receive the photographs, name them, and if a good photograph of the specimen has not been published, we will publish it.

THE EMBRYOLOGY OF ANTHURUS

Miss A. V. Duthie, South Africa, must must have anticipated our request for an egg of Anthurus (cfr. the recent Myc. Notes, page 647), for she sends an egg in alcohol. A section, figure 1032, shows that it is entirely different from Lysurus, with which it has been confused.

Fig. 1031.

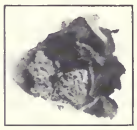


Fig. 1032.

Lysurus has the arms in the egg connected with the volva by a thin plate (which we call umbilical), and the gleba entirely surrounds the arms, excepting, of course, where the plates are attached. (Compare Myc. Notes, page 647.) Anthurus does not have plates connecting the arms (or rather lobes) and volva, and the gleba is placed in the center and on the sides of the arms. There is no gleba on the back of the arms. Lysurus belongs to the Clathrus group, and Anthurus to the Phalloid group. Some day the phalloids will be divided into two groups on the structure of the eggs.

Our figure 1031 represents a longitudinal section of an egg. Figure 1032, a cross section of a half through the lobes.

ADDITIONAL NOTES ON CORDYCEPS

We ask all of our readers who find Cordyceps to simply gather them with the hosts attached, dry them, and send to us. There has been a great deal written about Cordyceps, more or less true, but there are very few specimens in the museums.

CORDYCEPS HAWKESII. PHOTOGRAPH FROM L. RODWAY, TASMANIA (Fig. 1033).—This is a dubious species, of which no specimen has been seen by me, none being found in either of the two museums of London. It is quite close to Cordyceps Gunnii, and in my pamphlet I suggested that it was a short, clubbed form of that species, and I still think its relations to that species are too close. Mr. Rodway advises me that it differs from Cordyceps Gunnii in that only the fertile portion is yellow and is entirely distinct from the stipe, also the ostioles are more prominent. The figure that we present herewith of Mr. Rodway's photograph is natural size, and it is made from probably the only specimen in existence. By reference to Cooke's figure reproduced in our Synopsis it will be noted that Cooke took his usual liberties in drawing his figure, and that there are several discrepancies. The most glaring one is that the Cordyceps is represented as growing from the back of the host. Cordyceps Hawkesii grows from the same host as Cordyceps Gunnii, which is the larva of a species of Pielus. By reference to our figures of Cordyceps Gunnii it will be noted that it grows in the same manner, and does not differ from either figure of Cordyceps Gunnii more than each figure differs from the other. I believe it is best referred as a synonym for Cordyceps Gunnii.

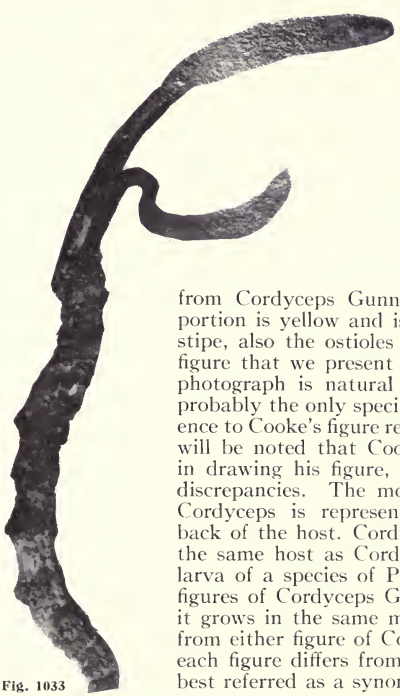


Fig. 1033

CORDYCEPS DOVEII. PHOTOGRAPH FROM L. RODWAY, TASMANIA (Fig. 1034).—This is another of the rare species of Australasia which is not known to me from any specimens. We presented in our pamphlet a copy of the original drawing found at Kew, and it will be noted by comparison with the photograph of the specimen sent by Mr. Rodway that the drawing is quite characteristic. The species was originally from Mr. Rodway and the only specimen that exists is probably in Mr. Rodway's possession. It has never been found by anyone else. Our figure is natural size. As we stated in our Cordyceps of Australasia, there is no other similar Cordyceps known. In the figure prepared by Mr. Rodway (Cfr. Synopsis, Fig. 620)there is a detail drawing of the clubs and perithecia that gives a better idea of the plant than this photograph.

Fig. 1034

A PARASITE ON A PARASITE

We have a most valued correspondent in New Zealand, Mr. H. Hill, Napier, who sends us fine collections of the curious Cordyceps Robertsii, which seems frequent in this country. This Cordyceps is a parasite on a large larva, killing its host, and flourishing at the expense of the animal tissue.

We gave an account and photograph of it in our Cordyceps of Australasia, page 5, figure 616. In a fine collection recently received of this Cordyceps, we noticed two clubs that were infected by some parasitic, fungal species. This is a section of mycology about which we know little, but we were curious to know its nature and examined "au microscope." It is strange, but we found it to have exactly the same spores as the Cordyceps has, and would be classed in the same section as Cordyceps, viz., the genus Ophionectria, at least according to key characters, although the perithecia are not "bright-colored." For convenience in our museum we have labeled it Ophionectria Cordyceps.

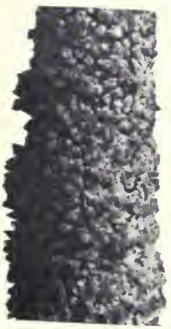


Fig. 1035.

Mr. Seaver, to whom we sent a portion of a specimen, suggests the possibility of the Cordyceps having produced a second crop of perithecia on an old fruiting club. We hardly think this is an explanation for the second layer of perithecia are only produced where the club is diseased, and the greater part of each infected Cordyceps club is not diseased and has normal perithecia.

We present a photograph of a portion of the Cordyceps club (enlarged) bearing the Ophionectria. This parasite seems to abort the perithecia of the Cordyceps and produces its own perithecia which have the same spores. In fact, it is a kind of a vegetable cuckoo.

A parasite growing on another parasite illustrates the old rhyme:

> "Great fleas have little fleas upon their backs to bite 'em,
> And little fleas have lesser fleas, and so ad infinitum,
> And the great fleas themselves, in turn, have greater fleas to go on;
> While these again have greater still and greater still, and so on."
>
> —De Morgan: A Budget of Paradoxes.

NEW SPECIES

I hope my readers will not infer from my publications that I have degenerated into a "new species" hunter. I get so many plants from regions where there have been but little collected, and so many species unknown to me come in, that there is nothing for me to do but to either give them a name or pile them up unnamed in our museum. I have been pursuing the latter course so long that my museum is becoming clogged with unnamed plants. Of the two evils I think the former is preferable, although I have not much idea that it will be of much practical service, excepting in my own collection and to my correspondents.

I am not looking for "novelties." I should much prefer the old species, but I can not help if I get plants that I do not know. There are more foreign plants come to me every few months than Fries got during his life. Naturally in these quantities, and from uncollected regions, there are a number that I can not name. The real study of Mycology is the classification, distribution and relative abundance of the species. "New species" are an incidental part of this work, but there are very few "new species" now that are at all common. They are the rarer local plants. In puff balls, we were not troubled with many "new species." During six years spent on the work, we did not propose one a year. But the polypores are either more variable, so that we can not always recognize the old species, or the species are more numerous. We get an embarrassingly large number for which we do not have names.

We sometimes get letters from correspondents regretting that they have probably not sent any novelties. We are more glad to get the "old species" than we are those we can not name. The more we handle specimens the better we learn the species, and not infrequently something "new" develops about "old" species. We do not deny that we are much gratified to receive such striking novelties as Sebacina Amesii from F. H. Ames, New York, Paulia resinacea from J. T. Paul, Australia, Mesophellia castanea and Diploderma insolitum from C. C. Brittlebank, Australia, Arachnion Scleroderma and Arachnion giganteum from Miss A. V. Duthie, South Africa, Pyrenopolyporus Hunteri from F. H. Hunter, Tropical Africa, etc. But none the less are we pleased to receive the species that have been named, but which were imperfectly known, such as Cordyceps sobolifera from S. Kawamura, Japan, Hypoxylon cerebrinum from J. B. Hart, Trinidad, Ganodermus umbraculus from J. Gossweiler, Africa, Seismosarca hydrophora from J. B. Cleland, Australia, Daldinia angolensis from T. Hunter, Tropical Africa, etc. Rarely a collection comes to hand that we do not find something of interest, but it is by no means the "novelties" that are of the most interest.

RARE OR INTERESTING PLANTS RECEIVED FROM CORRESPONDENTS

POLYPORUS (AMAURODERMUS) SALEBROSUS, FROM W. SMALL, AFRICA. This was published in 1912, Letter 42, specimen from Hyac Vanderyst, Congo Belge. It is the second collection received, and is a much better collection than the types. The species of the section Amaurodermus are rare and most of them are known only from the type collections. We are therefore much interested whenever we receive one.

Polyporus salebrosus, as shown by this fine collection, varies from an inch to four inches in diameter, with a slender stem from 6 to 8 inches. The stem which has a dull surface is deep rooting (4 inches in one specimen), and probably proceeds from a rhizome. I have often thought that the earth-growing species of tropical Amaurodermus and Ganodermus proceed from rhizomes, but it has never

Fig. 1036.
Polyporus salebrosus.

been proven, as collectors usually just "pull them up." The surface of the pileus is dull, unicolorous, or with a few darker zones. The spores of this species are exceptional in the group. Usually they are deeply colored, but in this specimen so faintly colored, that if we did not know the relations of the plant we might suppose them hyaline. We present a photograph of a medium and a small sized specimen of this fine collection from Mr. Small, and also a figure showing the rooting base of a stem.

URNULA CAMPYLOSPORA, FROM J. B. CLELAND, AUSTRALIA.—We include this under the name as found in Cooke's Handbook where a good figure (165) of it is given. According to Massee, who also gives a good figure of it (Jour. Linn. Soc., Vol. 31, Pl. 16, f. 17), Berkeley named it four different times, and it is found in Saccardo under four different genera, as follows: Macropodia campylospora, Geopyxis cinerea-nigra, Rhizina reticulata, and Peziza rhytidia. We have not done enough work with this class of plants to have definite ideas of generic distinctions, but we believe it is cogeneric with our common Urnula Craterium. It seems frequent in Australasia.

Fig. 1037.

POLYSTICTUS ADUSTUS, FROM MRS. SUSAN TUCKER, WASHINGTON (Fig. 1038).—Pileus thin, sessile, dimidiate, growing imbricate. Surface minutely pubescent, adustus, sometimes with a

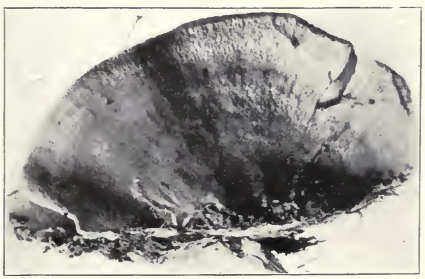


Fig. 1038.

dark reddish brown zone at base. Context white, stupeus. Pores minute, round, with white tissue, and usually adustus mouths.

The nearest ally of this species is Polystictus hirsutus, notwithstanding the entirely different surface. It has the general bearing of a thin Trametes.

POLYSTICTUS (SECT. PELLOPORUS) LIGNICOLA, FROM REV. C. TORREND, BRAZIL (Fig. 1039).—Entire plant cinnamon brown, 2 to 3 inches in diameter (one specimen sent 7 inches in diameter), mostly pleuropodial, rarely mesopodial. Stipe 1-2 inches, solid, covered with short cinnamon tomentum. Surface hard, rugulose. Context thin, concolorous. Pores rigid, with thin walls, medium 2 to mm. round or somewhat elongated. Mouths and pore tissue concolorous. Hymenium velutinate with subhyaline projecting hyphae, somewhat colored, but without the true setae of similar species. Spores not found.

Fig. 1039.

The feature of the species is the rigid, trametoid pores, hardly suggesting other plants of this section (Pelloporus 37a) where we would classify it. The plants are lignicoline, differing in habits from others of the section. Rev. Torrend kindly suggests, in sending it, the name Pelloporus Lloydii, which we are unable to use in keeping with rules we made some years ago.

STEREUM FRUSTULOSUM, FROM W. SMALL, AFRICA (Fig. 1040).—This species occurs very commonly in the United States and Europe, and I have it from Japan. With us it always grows on hard, oak logs that are but little decayed. It is resupinate, tubercular, as if broken into little pieces, hence the name. Our figure 1041 gives an accurate representation of it that can not be confused. Fries describes it as date brown, and so I found it in Sweden, but with us it has usually brown context and white hymenium. The

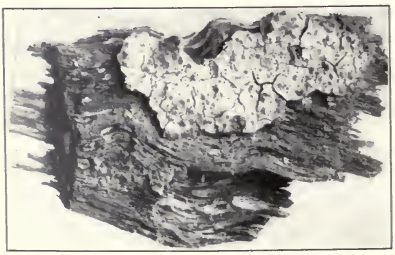


Fig. 1040.

statement in the books that it is "pulverulent with cinnamon spores" is an error, for the spores are hyaline. They measure about $3\frac{1}{2}$ x 5. Everyone seems to have known Stereum frustulosum, excepting one German writer, Hartig, who gave an excellent account of the peculiar way in which the fungus affects the wood, but who called it Thelephora perdix. No wonder the English author who translated the book

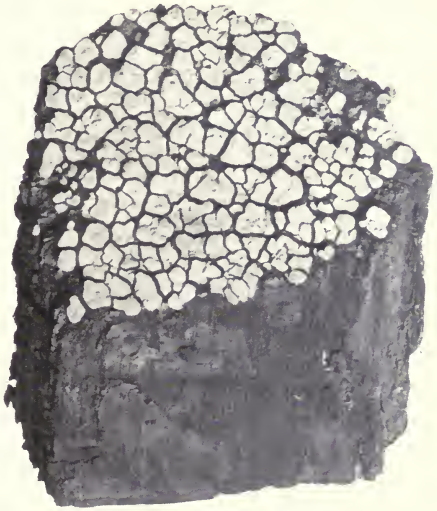


Fig. 1041.

states "it is not known as British." It is known as British very commonly, but not as Thelephora perdix. And this has not been corrected even in as late a book as Saccardo, Vol. 20, 1911. Stereum frustulosum has peculiar cystidia. They have little spiny processes, as shown on our figure 565 of Letter 51 of an Australian species. I do not know, but presume they have been noted before in connection with this species.

We have from W. Small, Africa, a form of Stereum frustulosum (Fig. 1040), which forms a continuous layer, with a few cracks, but not broken into little frustules, as the plant always is with us. With the same peculiar microscopic features, and the same peculiar method of attacking the wood (Fig. 1042), there can be no question of the identity of the fungus.

Fig. 1042.

POLYSTICTUS BAURII, FROM W. SMALL, AFRICA (Fig. 1043).—Pileus alutaceous, glabrous, tapering to a short dilated, glabrous stipe. Pores minute, alutaceous. This is another case where we fit a plant to an old description, when no specimen is known, rather than to propose a new name. The plants answer the descrip-

Fig. 1043.

tion fairly well, excepting that the plants evidently did not grow horizontally, but they might do so. They came from the same country, and it is better to put an old name into use than to propose a new one. In this sense Polystictus Baurii belongs to Section 13 of our Stipitate Polyporoids.

POLYSTICTUS VIBECINUS, FROM W. SMALL, AFRICA (Fig. 1044).—We disposed of this species in our Stipitate Polyporoids as "No type exists. From description it is close to grammocephalus." We have resurrected the name and apply it to this plant, which is better than to propose a new name, though, of course, it is not certain. It came from the same country, however, and fits fairly well the description.

Fig. 1044.

Pileus alutaceous, with a smooth, striate surface. Stipe lateral, short, dilated, of a soft texture, and the substance seeming to overflow

the base of the pileus. Pores minute, alutaceous. It is the first time we have seen the species. So many of Fries' African specimens have disappeared, that the only thing to do is to fit the names to the species where they fit the best. It belongs, however, in Section 22 of my pamphlet, not the grammocephalus section. The specimens disagree with the description, for pores do not extend to base of stipe, but in one of the specimens there is an indication of pores on the stipe.

POLYPORUS UNITUS, FROM W. SMALL, AFRICA (Fig. 1045).—Pileus infundibuliform, thin, fleshy, dark reddish brown. Surface glabrous, unicolorous, slightly striate, ridged. Stems several from a rooting base, brown, about an inch long, united above to form one perfect pileus. Pores fleshy, dark, small, but usually elongated. Cystidia none. Spores abundant, compressed globose. 10 x 12, hyaline, smooth.

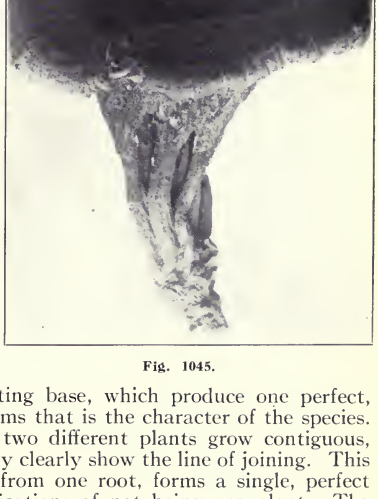


Fig. 1045.

This is based on a single specimen, and it is difficult to believe that it is the usual manner of growth. If we knew any species from which it could be derived, we should consider it an accidental growth. But it seems peculiar that it should send up several stems from a rooting base, which produce one perfect, infundibuliform pileus. It seems that is the character of the species. It sometimes happens, when two different plants grow contiguous, that the pilei fuse, but generally clearly show the line of joining. This plant with several stems (5) from one root, forms a single, perfect pileus, with no marks or indications of not being one plant. The species is entered in our Section Lentus 45c.

PTYCHOGASTER LUCIDUS, FROM REV. C. TORREND, BRAZIL (Fig. 1046).—We do not know that Polyporus lucidus ever takes, in temperate regions, a Ptychogaster form, but Rev. Torrend sends the normal, tropical form, with the Ptychogaster form growing from the same mycelium. We gave in Mycological Notes, Polyporoid Issue, No. 2, page 31, an account of Ptychogaster albus, which in Europe is the most frequent Ptychogaster known. No one has explained why or under what conditions the Ptychogasters are formed. All that is known is that certain specimens, instead of developing the normal spores, and basidial spores, produce in great quantities conidial

spores, borne direct from the hyphae, and that the pores are obliterated. Sometimes these spores are borne in such numbers that the specimen is simply a mass of spore powder, with not enough hyphae

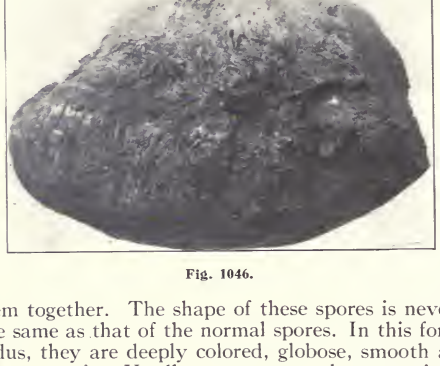


Fig. 1046.

to hold them together. The shape of these spores is never, as far as I know, the same as that of the normal spores. In this form, Ptychogaster lucidus, they are deeply colored, globose, smooth and vary in size from 4 to 12 mic. Hardly any two are the same size.

GEOGLOSSUM HIRSUTUM, FORM DEPAUPERATUM, FROM J. UMEMURA, JAPAN (Fig. 1047).—This is a little form, hardly a cm. high, growing on dry ground in moss. Notwithstanding its small size and different habits, I should prefer to refer it as a form of Geoglossum hirsutum. The spores (colored, 110 mic. 15 septate), paraphyses, and setae are the same. Geoglossum hirsutum is our most frequent species in the United States, but with us I do not know it to take this depauperate form. The photograph we present was made in situ by Mr. Umemura.

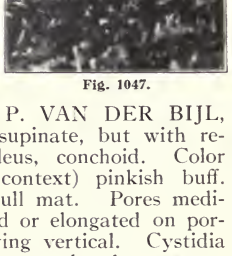


Fig. 1047.

POLYPORUS CONCHATUS, FROM P. VAN DER BIJL, SOUTH AFRICA (Fig. 1048).—Largely resupinate, but with reflexed pileus, conchoid. Color (also of context) pinkish buff. Surface dull mat. Pores medium, round or elongated on portion growing vertical. Cystidia none. Spores abundant, 4-5 x 8-10, hyaline, surface uneven.

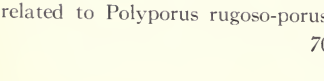


Fig. 1048.

This belongs in Section 91 of the Apus Polyporus, and closely related to Polyporus rugoso-porus. The color is entirely different.

T. S. BRANDEGEE

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 50.

CINCINNATI, O. OCTOBER, 1917.

P. A. KARSTEN

UNIVERSITY OF CALIFORNIA

JAN 2 0 1942

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

P. A. KARSTEN

Through the kindness of Lars Romell we are enabled to present to our readers a photograph of Professor Karsten, who died recently, April 22, 1917. Professor Karsten was born in 1834 and he was in his 83d year at the time of his death. The photograph which was procured for us by Mr. Romell from Dr. K. Starbäck was taken some fifteen or twenty years ago, or perhaps longer.

Karsten has been very active in the study of fungi and was a practical field collector. He has written a great deal on the fungi of Finland, most of it systematic. In his earlier works he followed the classification of Fries, and personally, we think, it is unfortunate that he did not so continue until the end. However, like a few others, he imagined that he could get up a classification that would supplant Fries, but I think it was a failure and that but few mycologists pay any attention to it. It is unfortunate that men like Karsten, Quélet and others, who were the most active field workers and attained the best knowledge of their local plants, should have lessened the value of their work by attempting to impose a lot of useless names in which no one else is interested Karsten collected in practically the same region as Fries and had he been content to work as a commentator and illustrator of Friesian plants, his work would have been of great value, for Karsten had the advantage of the use of the microscope, which Fries never employed to any extent.

Karsten's work has been very useful in adding to the knowledge of the plants of that region, not only by his publications, but by his exsiccatae, which are found in almost every museum of Europe. He was evidently a very active collector and student.

We wish to extend our thanks to Mr. Lars Romell and through him to Dr. Starbäck for the loan of the photograph. It is perhaps well to state that our photo-engraving being an enlargement, has a rugged and unpolished appearance, due to the enlargement, but the features of the original are well presented.

THE VARIATIONS OF POLYSTICTUS VERSATILIS

One must learn Polystictus versatilis by familiarity with it, by handling it. By drawing the line closely a half dozen "species" could be made of it. Like most fungi it is a widely distributed plant. We have it from Alabama (1), Brazil (7), Cuba (1), Nicaragua (2), Straits Settlements (1), Madagascar (2), Java (2), India (1), Japan (2). It was named from the Philippines, and hence the "type form" occurs in the East. This form (Figs. 1049 and 1050) generally has large, thin, elongated pores and their color is purplish, sometimes quite dark. But the color of the pores varies and we have collections with no purplish cast, but tending to ochraceous. The pores are always thin walled, and rarely the walls are prolonged, becoming somewhat irpicoid.

Fig. 1049.

In the American tropics the plant sometimes takes the Eastern form, but usually has smaller pores (Fig. 1051). Rarely the American plant has the pores elongated. The species is light weight, and made up of loose hyphae. The upper surface, usually pale, is always strongly hispid. The hymenium has hyaline, fusoid, thin walled cystidia, often capitate, but this feature varies, and often the projecting hyphae of the hymenium are longer, slender and not specialized. Notwithstanding the variation of Polystictus versatilis it is easily recognized when one knows it, but the only way to learn it is to become familiar with it.

Fig. 1050.

HISTORY AND SYNONYMS.—This frequent species seems to have been first collected in the Philippines and distributed by Cummings (2026). It was named Trametes versatilis by Berkeley, and the same collection called Trametes cilicioides, by Fries. It was also called, from a Philippine collection, Hexagona ciliata, by

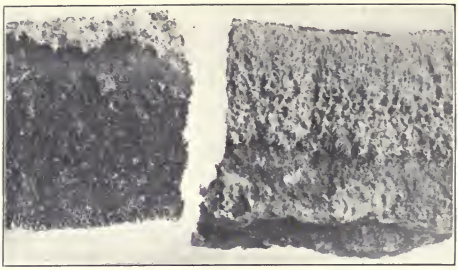


Fig. 1051.

Klotzsch. It was referred by Léveillé to Polystictus fimbriatus and named by Berkeley from Cuba, Polystictus cladotrichus, and from Ceylon (a denuded specimen) Polystictus venustus. Spegazzini named it Polystictus Hariotianus and also referred it to Polystictus Drummondii, which Bresadola in "honor" of his mistake named Polystictus Spegazzini, and afterward acknowledged it. Zollinger's Java collection (1386) on which Léveillé based Trametes Zollingeriana is this species. Murrill misreferred the American plant to Polystictus villosus, but he got it right from the Philippines. So while Polystictus versatilis is a variant species, it does not present as much "variation" as the fellows who have named it.

NOTES ON AUSTRALIAN PHALLOIDS

PSEUDOCOLUS ROTHAE (Fig. 1052).—Through the kindness of Dr. J. Barton Cleland, we present herewith drawings of Pseudocolus Rothae, which were made by Phyllis Flockton-Clarke and are evidently so accurate and so characteristic that they answer the purpose as well as a photograph. Pseudocolus Rothae has been imperfectly and inaccurately known before, and we are glad to get such characteristic figures. From the appearance of the figure it could be classed in the genus Laternea, but as we understand it, the columns are consolidated into a stem at the base contained in the volva. The genus Pseudocolus is only a stipitate Laternea. There are rare records of Laternea columnata occurring in Australia. It is a very common species in the American tropics, but it is not known from Australia, and it is probable that the Australian record is based on Pseudocolus Rothae.

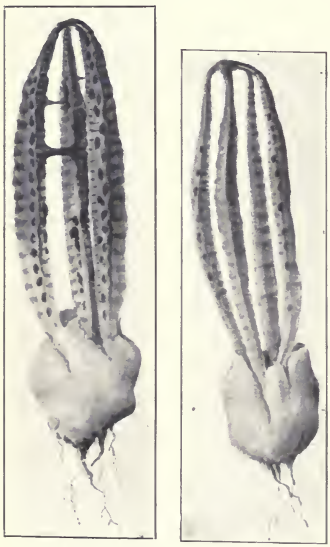


Fig. 1052—Pseudocolus Rothae.

COLUS HIRUDINOSUS IN AUSTRALIA.—We have received from Dr. J. Barton Cleland a very fine drawing of Colus hirudinosus, which was made by Phyllis Flockton-Clarke (Fig. 1053). The drawing is so characteristic that there can be no question of the occurrence of Colus hirudinosus in Australia. Its authentic occurrence there is of great interest in the distribution of phalloids, for heretofore it has only been known from the Mediterranean regions. Dr. Cleland informs us that it is a very rare phalloid in Australia and only known to him from two localities, Milson Island, Hawkesbury River, and Byron Bay, both located in New South Wales, but about 300 miles apart. The history of Colus hirudinosus in Europe is rather interesting. It was first found on the Island of Corsica, growing in manured places and on manure, but it was later found by Rev. Torrend, in Portugal, growing in the sand and in unmanured places. It is not known from other sections than the Mediterranean regions and from New South Wales.

We should like very much to see a photograph of this Australian plant, for the drawing is not exactly the European plant.

Fig. 1053.
Colus hirudinosus.

THE GENUS PYRENOPOLYPORUS

Fig. 1054.
Pyrenopolyporus Hunteri.

A most curious genus reached me from T. Hunter, Africa, viz.: a Pyrenomycete simulating a Polyporus. When I first saw it I thought it was a Polyporus belonging to the section 93 Apus Polyporus, although I could not account for carbonous context in a Polyporus.

PYRENOPOLYPORUS.—Stroma pileate, with a smooth surface, and carbonous tissue simulating the pileus of a Polyporus. Growing horizontal, sessile, attached with a small attachment. Perithecia contiguous, forming a layer on the *under side* of the stroma and simulating the pores of a Polyporus.

PYRENOPOLYPORUS HUNTERI (Fig. 1054).—Stroma (pileus) 3-4 inches in diameter, a cm. thick, sessile horizontal, black, with an even, dull, upper surface. Context black, carbonous. Perithecia contiguous, carbonous, forming a layer 2 mm. thick on under surface of the stroma.

Fracture of the perithecia glaucous to the eye. Mouths covered by a thin, carbonous layer. Asci not seen, probably evanescent as in the genus Camillea. Spores 6 x 12, colored, guttulate when young, resembling the spores of Hypoxylon and Xylaria.

Fig. 1055.

We present a photograph of the top of the pileus of a half specimen, also an enlargement (Fig. 1055) of a section showing the layer of perithecia. There is no genus heretofore known to which this can even be compared.

Type from T. Hunter, Africa (No. 71).

We have also from Mr. Hunter what appears to be a resupinate part of this plant. If this has reached Europe it has probably been named as Nummularia, a genus that we have not looked up in detail. But Nummularias grow on top of logs with the hymenium up, and Pyrenopolyporus when resupinate must grow on the under side of logs, with the hymenium facing the ground. This, to my mind, is an essentially different, generic idea.

RARE OR INTERESTING FUNGI RECEIVED FROM CORRESPONDENTS

POLYSTICTUS CONGLOMERUS, FROM CHAS. C. PLITT, BALTIMORE (Fig. 1056).—Pileus, thin, rigid, developed from a hard, white, conglomerate, myceloid base. Surface unicolorous, between isabelline and honey yellow, velvety with soft hairs, faintly zoned. Pores minute, rigid, alutaceous. Spores 3 x 5, hyaline.

Fig. 1056.
Polystictus conglomerus.

The feature of this plant is the method of development from a conglomerate base, unknown to me in any other species. The rigid pileus and pores point to Trametes, but it is customary to refer such thin plants to Polystictus. In grouping it we would put the species in the same section as versicolor. The specimens were sent to Mr. Plitt by Dr. H. E. Hone, from California.

ISARIA JAPONICA, FROM PROF. A. YASUDA, JAPAN (Fig. 1057).—As named by Prof. Yasuda. To the eye this is so similar to Isaria farinosa, our most common species, that our figure (1057) could be taken for either. The spores are different—2 x 4–5 reniform, curved, in the Japanese plant, 1½ x 5 straight in our species. Isaria farinosa is known to be a conidial form of Cordyceps militaris, which species is unrecorded in Japan. I hope Prof. Yasuda may be enabled to correlate this Isaria with its Cordyceps form in Japan.

Fig. 1057.

LASCHIA INTESTINALIS

(Or Poroauricula intestinalis, as it may be called.)

This must be a rare plant as this is the first specimen or record I have seen, excepting the type at Kew. It was originally from India, named seventy years ago as Favolus intestinalis and still so found in Saccardo. Certainly it is not a Favolus which does not have gelatinous texture and is not a true Laschia in the present sense. The basidia appear to me to be of the "pluriloc-ular" type and it is related to "Auricu-lariella" section in Saccardo, Vol. 6, page 407. This section comprises now three "species" (all of which are the same, "Laschia" delicata) and really a different "genus" from this. In "Laschia" delicata the hymenium is universal over a folded surface. Laschia intestinalis has definite pores like a Hexagona, and the hymenium is on the sides of the pores only. The bottom of the pores is sterile. We do not like to multiply the genera, but McGinty proposed for it Poroauricula. We present a photograph (Fig. 1058) of the type at Kew, the only specimen heretofore seen by us. Specimen from E. D. Merrill, Philippines (Luzon, H. S. Yates, 25824). We believe it has not been previously collected in the Philippines.

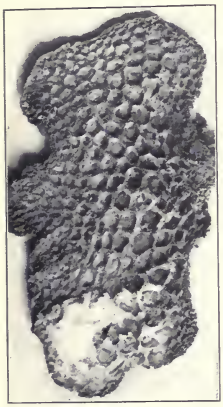


Fig. 1058.

"Laschia" delicata, a very similar plant, but with folds instead of pores, is frequent in tropical countries. It is better called Auricularia delicata.

AN INTERESTING SCLEROTIUM FROM REV. BOUTLOU, WEST VIRGINIA (Fig. 1059).—What is undoubtedly the sclerotium of some fungus was sent me in quantity by Father Boutlou. It grew in manured places, and as shown in our photograph, sometimes reaches a diameter of an inch. The surface is smooth and black and the context hard and white.

Fig. 1059.

There are in the tropics several species of fungi that are known to be produced by sclero-tia. The best known species are the Lentinus Tuberregium (Cfr. Myc. Notes, page 666), Polyporus sacer in Africa (Cfr. Stipitate Polyporoids, page 122), Polyporus tuberaster in Europe (Cfr. Stipitate Polyporoids, page 166), and several others. We do not, however, as far as known, have in the United States any species of fungus

developed from a large sclerotium, although there is an unnamed species of Lentinus in the arid region of our southwest.

A number of very complete papers on the sclerotia of Europe have been published by Léveillé, Bommer and others, and in looking them over I do not find any description that seems to apply to Father Boutlou's specimen. While the specimens grew in the ground under a manure pile, they are undoubtedly the sclerotia of some manure loving species. I only recall one in this connection, namely, Coprinus stercorarius, but that proceeds from sclerotia not larger than peas and can not possibly be these specimens. We hope that Father Boutlou will succeed in growing a fungus from the sclerotium and solve this interesting mystery.

ASTEROSTROMA EPIGAEUM, FROM PROF. A. YASUDA, JAPAN (Fig. 1060).—Resupinate, growing on bare ground. Thick, hard, woody. Context brown, of densely woven, dichotomously branched hyphae, with divaricate, spiny tips (hence Asterostroma for me, Asterostromella for v. Hohn. but probably Stereum for any one else). Cystidia none. Spores abundant, globose, 5-6 mic., minutely rough and I believe with a faint tinge of color, but almost hyaline.

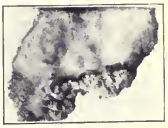


Fig. 1060.

This species resembles to the eye Stereum duriusculum, but has brown context and isabelline surface. It would be classed in the Friesian system in the genus Stereum.

LENZITES TENUIS, FROM PROF. A. YASUDA, JAPAN (Fig. 1061).—This was named by Léveillé from Guadaloupe and the specimen is at Paris. It was recently named Lenzites Earlei from Cuba. The character of the plant is the narrow, close, crisped gills (Fig. 1061). The West Indies plant is white and glabrous, and this

Fig. 1061.

Japanese collection has a minutely downy surface and a faint, pinkish

surface color, hence not exactly the same, but too close for a new name, I believe. There was a "Daedalea tenuis" named by Berkeley from the East, which is really a Lenzites, and as it is yellow, and same as Lenzites flavida (and about forty other names) it should not embarrass the use of Léveillé's name for this white species. Lenzites tenuis is a rare plant in the West Indies, and I have heretofore only known it from the *two* "type localities."

TRAMETES SENSITIVA, FROM PROF. A. YASUDA, JAPAN (Fig. 1062).—Resupinate, irregular, thick, rigid, probably pileate when well developed. Surface and the crust reddish brown. Context and pores pure white, unchangeable in drying. Pores minute, rigid, round. Cystidia none. Spores not found.

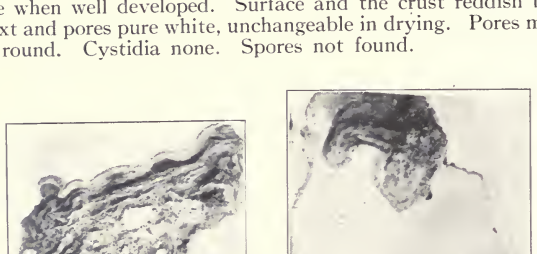


Fig. 1062.
Trametes sensitiva.

This reminds me so much of Trametes incondita (of South Africa, Cfr. Myc. Notes, page 551, Fig. 756) that until I compared them I thought it was probably the same. It has the same irregular, indefinite habits of growth. It is the second polyporoid, known to me, with a marked chemical test. (The other is Polyporus rutilans.) When Trametes sensitiva is touched with an alkali, it changes at once to red, which color shortly disappears.

DUCTIFERA MILLEII, FROM REV. LOUIS MILLE, ECUADOR.—The genera of Tremellaceae are not all defined. Since the microscope came into use, they are based on the basidia. These were first clearly pointed out by Tulasne, but as he was a student and not an inventor of names, it was left for subsequent savants to propose names based on the features that Tulasne demonstrated. Brefeld went into the basidia and structure of tremellaceous plants in the greatest of detail. We have in the United States and South America, and no doubt other countries, tremellaceous plants with structural features not known as to European species. The most

marked feature is that of species that have large, colored imbedded ducts. This is the third species that has come to my notice. (Cfr. Seismosarca hydrophora, Myc. Notes, page 629, Seismosarca alba, as Exidiopsis, Note 48.) The two previous have globose, cruciate

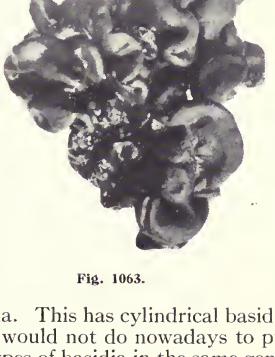


Fig. 1063.

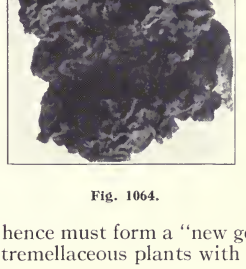


Fig. 1064.

basidia. This has cylindrical basidia, hence must form a "new genus," for it would not do nowadays to put tremellaceous plants with different types of basidia in the same genus.

DUCTIFERA.—Gelatinous, foliaceous or cerebrine. Hymenium amphigenous. Basidia cylindrical. Gloeocystidia deeply colored, imbedded ducts. Spores hyaline, curved.

DUCTIFERA MILLEII.—Gelatinous, when soaked out pale brown, but drying darker, cerebrine, lobed. Tissue of fine hyaline hyphae. Ducts (Fig. 1065) deeply colored, 6-8 mic. thick, irregular, often broken, dense near the surface, forming a cortical portion. Basidia not clearly made out by me, but no doubt cylindrical.* Spores 6 x 12 hyaline, guttulate, curved.

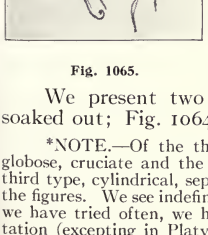


Fig. 1065.

This grew on rotten wood near Quito, Ecuador (Rev. Mille No. 4). In coloration it is about the same as Tremella frondosa, in form Tremella mesenterica, but in structure it does not accord with any other species known to me.

We present two figures natural size. Fig. 1063 is the plant soaked out; Fig. 1064 is the dried plant as received.

*NOTE.—Of the three types of basidia found in tremellaceous plants the globose, cruciate and the furcate are always readily seen and easily found. The third type, cylindrical, septate, we have never been able to clearly see, as shown in the figures. We see indefinite, cylindrical bodies, no doubt the basidia, but although we have tried often, we have never clearly made out the sterigmata nor the septation (excepting in Platygloea cfr. Note 263), but it is a safe proposition if one does not find the basidia to be of the first two types, they belong to the third type.

HORMOMYCES AURANTIACUS, FROM REV. A. BOUTLOU, WEST VIRGINIA.—Applanate, tubercular, soft, gelatinous, drying hard, cartilaginous. Color scarlet (Ridg.). Entire fungus seems to be composed of branched chains of catenate spores (Fig. 1066). It was named and figured by Bonardon who described it as orange, and gave a characteristic figure of its spores. The American plant was called Hormomyces fragiformis by Cooke, apparently on account of its "purple" color rather than orange, but "purple" in sense of Cooke is scarlet of Ridgway. I have collected it both in Europe and the United States and both are of the same color, and no doubt the same species, and also doubtless the South African species, Hormomyces callorioides, described as "rose" color. The plant has the appearance of the plasmodium of some Myxomycete.

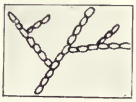


Fig. 1066.

Saccardo classes it with tremellaceous plants, suggesting that it is the conidial state of some Dacryomyces, and Patouillard and Hennings take the same view. I think there is no basis for that, for there is no species of Dacryomyces of the same color, nor are there any other tremellaceous plants known with similar spores. No one ever found it that it did not have these catenate spores, and until something more is known about it, I should consider it an autonomous species.

STEREUM ATROPURPUREUM, FROM MISS MARGARET L. FLOCKTON, AUSTRALIA (Fig. 1067).—Sessile, dimidiate, thin, rigid, with a thick coat of dark, purplish tomentum. Hymenial face smooth, dark (almost black). Basidia unknown to me, hence it is not possible (for me) to refer it to a genus (Cfr. Myc. Notes, page 680).

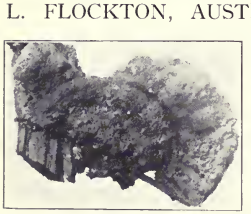


Fig. 1067.

About two-thirds of a section is made up of loose, coarse, colored hyphae, which are really the tomentose covering, and one-third of very fine, pale (notwithstanding the hymenial face appears dark to the eye) colored hyphae (cartilaginous tissue), bearing abundant small conidial spores. I do not know, but I do not doubt that it belongs to the same "genus" as "Stereum" lugubre, whatever that may be. (Cfr. Letter 46, page 7.)

There are at Kew two collections from Malay. The first was called "Stereum aterrimum" by Cooke, in 1884, and the second called "Stereum aterrimum nov. spec." by Massee, in 1899. I did not section either one of them, but judging by the eye, I thought they were the same, and they are probably the same as this plant from Australia, although (at present) both the Malay plants are well named "aterrimum" and this plant is distinctly purplish.

IRPEX VERSATILIS, FROM MISS MARGARET L. FLOCKTON, COLLECTED BY P. F. CLARKE, AUSTRALIA.—Pileus

dimidiate, thick, rigid. Surface hirsute, strigose (denuded in Fig. 1068). Context brown. Teeth mouse grey, irregular, tubercular, somewhat daedaloid. Basidia hyaline, forming a palisade layer. Cystidia similar to basidia, but longer, hyaline, thick walled, smooth. Spores 4 x 8, hyaline. The subhymenial hyphae are deeply colored.

Fig. 1068.

The general position of the plant is doubtful. It is perhaps a better Radulum and it might be called Daedalea. While I would not suggest that it is a variant of Polystictus versatilis, I am satisfied that there is some relation between the two plants that I can not explain.

FOMES SETULOSUS, FROM MISS MARGARET L. FLOCKTON, COLLECTED BY MR. BLAKELEY, AUSTRALIA. (Compare Synopsis Fomes, page 243.) The presence or absence of setae on the hymenium is usually considered of specific importance in the Fomes with brown context. Indeed in our Synopsis of the genus, we grouped the species on this character. Species that have setae like Fomes conchatus, Fomes torulosus, Fomes Everhartii, Fomes senex, etc., seem to always have them. Others, like Fomes ribis, Fomes fomentarius, never have setae.

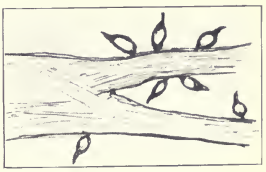


Fig. 1069.

But we are convinced that Fomes robustus of Europe and the United States is the same species as Fomes setulosus of Ceylon and Australia, although with us the species never has setae to my knowledge. From Australia we get collections sometimes without setae, sometimes with a few setae, and sometimes with abundant setae (Fig. 1069) as in the specimen just received from Miss Flockton. In every other feature the plants are the same, and we believe are in reality the same species.

There are other similar cases. Thus Fomes Yucatensis is for me Fomes rimosus with setae, but we never find setae on the common Fomes rimosus in the United States. In interpreting the "species" of nature, it does not do to lay down any rigid laws. Nature makes her own laws. It seems that in some species which vary in presence or absence of setae, the setae are absent from specimens of temperate countries, and often present in those of warm countries.

FOMES OCHROLEUCUS, FROM J. T. PAUL, AUSTRALIA (Fig. 1070).—We considered this plant in our Apus Polyporus pamphlet as Polyporus, stating that sometimes it takes "Fomes" forms. This specimen from Mr. Paul is a true Fomes with nine annual layers distinctly shown. The plant can never be mistaken from its abundant large, truncate, hyaline spores. The older portion of the plant has turned black, which is a feature of the species as we have published. The shape of the specimen is narrow, ungulate, cuneate. We saw at Kew a New Zealand collection with white context and this peculiar shape, and on it we based Fomes cuneatus (Fomes Synopsis, page 217). We did not find spores, which is strange, if it is the same species as this, which it may be. This species must not be confused with Fomes ochrolaccatus, another peculiar species recently found in Australia.

Fig. 1070.

HEXAGONA CRASSIPORA, FROM T. HUNTER, AFRICA (Fig. 1071).—Notwithstanding its very remarkable pore forms, I look upon this as a variation of Hexagona speciosa. There seems to be in Africa a group of species (or forms) with the following essential characters. Surface smooth, faintly zonate. Context color Dresden brown to Cinnamon brown. Pores glaucous, without setae or cystidia. The original of this group was named from Africa, Hexagona speciosa (Cfr. Hexagona pamphlet, page 21). The collections differ, thick 1-1½ cm. to thin ½ cm. and in the pore sizes (Cfr. Hexagona Smallii). I never saw a Hexagona before with pores like this specimen (Fig. 1071), received from Mr. Hunter. With their thick walls and irregular sizes, they remind one more of cavities in the context rather than definite pores. Since this specimen has been received from Mr.

Hunter, we have gotten a second collection (No. 75). This, while it has thick pore walls is not markedly different from the usual Hexa-

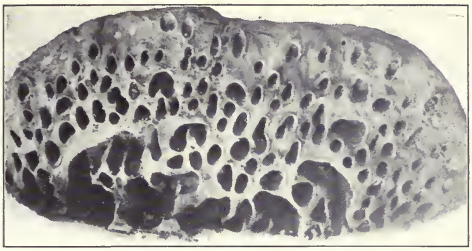


Fig. 1071.

gona pores, and is a connecting link between Hexagona crassipora and the normal Hexagona speciosa.

IRPEX PURPUREUS, FROM JAPAN, AS NAMED BY PROF. A. YASUDA (Fig. 1072).—Pileate from an effused base. Pileus purplish brown, with soft, appressed, fibrillose surface. Teeth slender or deformed, irregular, often compound. Sometimes near the margin deformed and reduced to Radulum-like tubercules; dark purplish brown, velutinate to the eye. Cystidia dense, hyaline, smooth, mostly blunt, 5-7 mic. thick. Spores (if correctly seen) globose, hyaline, smooth, 5-6 mic.

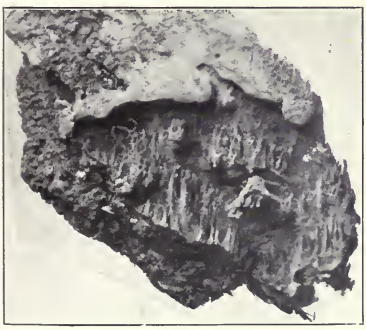


Fig. 1072.

The character of the species is the velutinate, purplish hymenium, reminding one of the hymenium of Stereum membranaceum. We present a photograph (Fig. 1072), showing the general habits of the plant.

IRPEX LAMELLIFORMIS, FROM J. UMEMURA, JAPAN (Fig. 1073).—We have gotten this plant several times from Japan, viz.: J. Umemura, J. E. A. Lewis, H. Miyabe, T. Yoshinaga, and perhaps others. We misreferred it to Irpex Noharae (Cfr. Myc. Notes, page 601) from our record, but on a recent visit to New York we again examined the type of Irpex Noharae and found it different. There are three species in Japan with lamelliform teeth, and it is

curious that we do not know this type of Irpex teeth excepting in Japan.

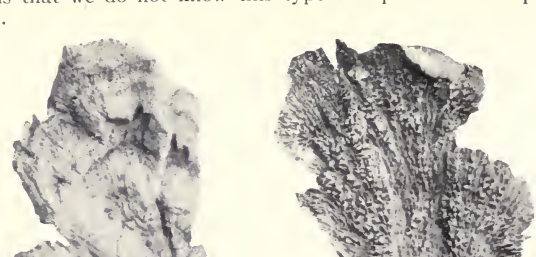


Fig. 1073.
Irpex lamelliformis.

Irpex lamelliformis has the teeth arranged in lines (lamelliform), in fact it might be classed as an irpicoid Lenzites. The whole aspect of the plant and coloration of the teeth, and the microscopic details remind one of Polystictus abietinus. There is an intimate relation between these two species, although the hymenial configuration is so different.

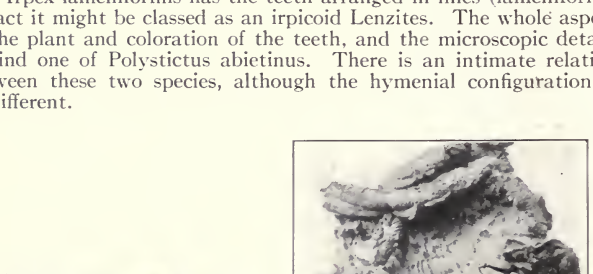


Fig. 1074.
Irpex Noharae.

Irpex Noharae (Fig. 1074) to which we formerly referred it, differs in texture and surface, and coloration. The surface is more pubescent, on the order of Daedalea unicolor. The teeth are more rudimentary. It is evidently rare in Japan, for only known from the type collection.

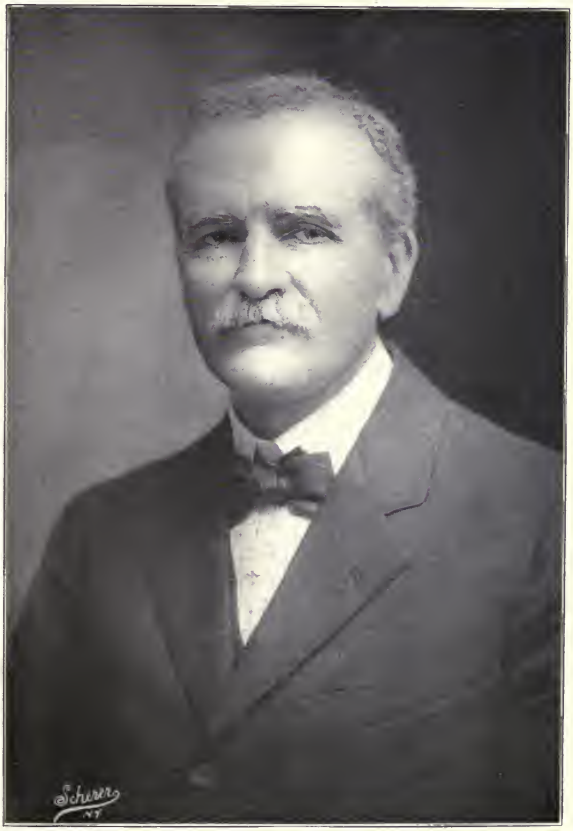
T. S. BRANDEGEE

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 51.

CINCINNATI, O. NOVEMBER, 1917.



FRANK H. AMES

UNIVERSITY OF CALIFORNIA
AT LOS ANGELES
JAN 2 0 1942

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

FRANK H. AMES

We present on the first page of this pamphlet a photograph of the late Frank H. Ames, who died in Cambridge, Mass., on August 1 of this year. Mr. Ames was a teacher the greater part of his life, and for the past twenty years was connected with the schools in Brooklyn, N. Y. He was an enthusiastic lover of nature and well informed on various branches of Natural History, but of course it is in connection with his study of Mycology that we came in touch with him. He was a fine collector and often sent to our museum a nice selection of the rare fungi.

He was born October 8, 1852, hence was in his sixty-fifth year. The photograph that we present was taken about ten years ago.

Mr. Ames published nothing on the subject, but was well informed on classification, and his specimens were always accompanied with critical notes that added much to their value. Although we did not know him personally, we feel a personal loss in his death.

Mr. Ames' name will be preserved in connection with the American fungi through Sebacina Amesii, that was published in Mycological Notes, page 576.

AN INTERESTING PHALLOID FROM CHINA

LYSURUS SINENSIS, FROM G. GISH GEE, CHINA.—The entire plant about three inches high. Stem fluted with five angles, about a cm. in diameter; hollow, composed of large, cellular tissues. Stem bearing five angular arms, which are connivant, but distinct from each other, except where they are united at the top into a tip about 2 cm. long.

The second foreign phalloid that was named is Lysurus Mokusin, which was published from China 137 years ago and crudely figured by Father Cibot, a Jesuit missionary, then located in China. The specific name refers to a Chinese province, and for more than a hundred years the world's knowledge of the plant rested on Father Cibot's

original account. In recent years the plant has been found in Japan and called Lysurus Beauvaisi, and we have a drawing of the plant made in Japan by Mr. M. Gono. Recently, also, it has appeared adventitiously in some warm houses in California. In addition there is one similar collection from Australia which was illustrated as Mutinus pentagonus, under the belief that the arms are united and consolidated into one piece. It is probable that when this Australian plant is again found, it will develop that it is the same species as Lysurus Mokusin.

Fig. 1075

Fig. 1076

In the original account and figure of Lysurus Mokusin by Father Cibot, the arms are shown and described as connivant, but as not united at the top. When we first received this plant from Mr. Gee, we thought it was the same species that had previously been illustrated from China, and although we noted that the arms are united into a tip, we thought that there was probably a discrepancy in Father Cibot's account. But on again going over his work carefully, we concluded that there is no possibility of Father Cibot's having overlooked this feature, and we concluded that the plant from Mr. Gee, with the consolidated tip, can not be the same species as the plant from Father Cibot without the tip. It may develop in time that we are mistaken in one or both of these assumptions, but until further is learned of the subject, we shall have to hold Mr. Gee's plant as distinct.

The specimen was received from Mr. Gee in alcohol and had the tip bent over as shown in one of our figures, but we presume that the tip is naturally erect, as shown in the other figure where it has been straightened out before photographing. In figure 1076 we give a section through the stem and section through the arms, and the tip of the plant showing how it is joined to the arms. The arms, as it will be noted from the section, are entirely distinct from each other and surrounded by the gleba.

We hope Mr. Gee will continue to observe the Phalloids of his locality, and from his observation we have no doubt that it will be decided whether there is one or two species of Lysurus in China. It is possible, of course, that the tip may be grown by some specimens and not by others, although that is not probable. Mr. Gee, by observation of the plants as he finds them, will be able to decide this point.

THE GENUS SEPTOBASIDIUM

SEPTOBASIDIUM PEDICELLATUM, FROM P. VAN DER BIJL, SOUTH AFRICA.—The genus Septobasidium is very imperfectly known as to foreign species. Recently the United States species have been carefully worked over by Prof. Burt and mostly named as "new species." They are very difficult to work with, for it is rarely

Fig. 1077
Septobasidium pedicellatum.

that they are found in fruit and there is little to go on except the general appearance, habits and color. We have but one common species in the United States named Septobasidium pedicellatum, or Thelephora pedicellata, as named by Schweinitz. There is no question in my mind as to the identity of Schweinitz species that he records as "frequent," for we all know in the United States what the frequent species

is. Prof. Burt would change the name on the strength of a scant specimen found in Schweinitz' herbarium, but as I look at it, that is basing nomenclature on accident rather than facts. Schweinitz' herbarium does not always represent Schweinitz' views as proven in a number of cases.

The genus Septobasidium is common, particularly in the tropics. It always occurs on living branches and is not saprophytic nor is it parasitic on the wood. It has been known for many years that there is some connection between species of this genus and scale insects. In fact it was mentioned by Fries, and Petch has recently stated that the earlier stages are parasitic on colonies of scale insects (Cfr. Note 42). The genus Septobasidium was named from the peculiar shape of the spore bearing organs, which are similar to those found in some of the tremellaceous genera. As a matter of fact, however, we feel confident as to a great many species of Septobasidium, of which we know nothing whatever about the basidia. Museum specimens are rarely fertile, and when they are it is a most difficult, microscopic problem to find the basidia. The tropical species of Septobasidium have never been separated. They are found in our literature, usually as Thelephora, but also as Daedalea, Hymenochaete, Hydnum, Corticum, Helicobasidium, etc.

I have a list of forty-six supposed species that I found in about a half dozen different genera in the museums of Europe, which, I venture, from their habits and appearance will eventually be classed in Septobasidium. We have in the United States two very similar species named Septobasidium pedicellatum and Septobasidium castaneum, which differ chiefly in color. Our common species is pedicellatum. Castaneum, which is a darker species, is of a more southern range. On comparison, Mr. Bijl's specimens are closer in color to pedicellatum than castaneum, but as a rule I think the specimens that I noted abundantly in the museums and which were by Berkeley referred to Thelephora pedicellata, mostly approximate Septobasidium castaneum in color. I think it will prove eventually that Septobasidium castaneum is the most common species of the tropics.

The following plants that I have (mostly) noted in the museums will finally, I believe, be classed as Septobasidium:

Septobasidium albidum, So. Amer., Patouillard, as Septobasidium.
" abnormale, Brazil, Hennings, as Corticium.
" atratum, West Indies, Patouillard, as Septobasidium.
" Bagliettoanum, Fries, Europe, as Hypochnus.
" bogoriense, Java, Patouillard, as Septobasidium.
" capnodes, Ceylon, Berkeley, as Thelephora.
" Cavarae, Europe, Bresadola, as Septobasidium.
" Carestianum, Europe, Bresadola, as Septobasidium.
" cinchonae, Java, Raciborski, as Septobasidium.
" coffeicola, Africa, Hennings, as Septobasidium.
" crinitum, Brazil, Fries, as Thelephora.
" dictyodes, Ceylon, Berkeley, as Thelephora.
" fisso-lobatum, Brazil, Hennings, as Hymenochaete.
" frustulosum, Cuba, Berkeley, as Hymenochaete.
" Henningsii, Java, Patouillard, as Septobasidium.
" humilis, Java, Raciborski, as Septobasidium.

Septobasidium Leprieuri, So. Amer., Montagne, as Corticium.
" lichenicola, Ceylon, Berkeley, as Thelephora.
" Michelianum, Italy, Calderi, as Hypochnus.
" Mompa, Japan, Raciborski, as Helicobasidium.
" paulense, Brazil, Hennings, as Septobasidium.
" protractum, Sydow, as Septobasidium.
" pteruloides, Montagne, as Hydnum.
" radiosum, New Guinea, Hennings, as Hymenochaete.
" rameale, Ceylon, Berkeley, as Lachnocladium.
" retiforme, Cuba, Berkeley, as Thelephora.
" rhabarbarinum, So. Amer., Montagne, as Daedalea.
" rubiginosum, Java, Patouillard, as Septobasidium.
" scopiforme, Brazil, Patouillard, as Septobasidium.
" septobasidioides, So. America, Hennings, as Hymenochaete.
" suffultum, Ceylon, Berkeley, as Thelephora.
" ussanguensis, Africa, Hennings, as Hymenochaete.
" velutinum, So. America, Patouillard, as Septobasidium.

The foregoing list is simply copied from my notebook of specimens in the museums. I have not confirmed it even as to the genera under which the species were originally named.

Thelephora spongia, Cuba, classed by Patouillard and Burt as Septobasidium, did not appear to me to be a fungus. I was told by a lichenologist at Kew that it is a lichen belonging to the genus Dichonema.

A NAUCORIA FROM A SCLEROTIUM

NAUCORIA SCLEROTICOLA, FROM REV. BOUTLOU, WEST VIRGINIA (Fig. 1078).—We gave in Mycological Notes, page 707, an account of a sclerotium found by Rev. Boutlou in the ground under some manure. It was of particular interest, as evidently the sclerotium of some fungus, and excepting some small sclerotia, we know of no fungus produced from sclerotia in the United States. Rev. Boutlou has just sent us an Agaric with this sclerotium attached, and it opens up another question as mysterious as the sclerotium was originally. Had the Agaric been sent to us separately, we should have said that it was the common Naucoria semiorbicularis, and now as we have them side by side we can not see any difference, excepting that Rev. Boutlou's plant is produced from a sclerotium. We will therefore not "describe" Naucoria scleroticola except to state that it is the same as Naucoria semiorbicularis produced from a sclerotium.

Fig. 1078.

No more common agaric grows than Naucoria semiorbicularis, and every wet season it comes abundantly in the lawns and pastures and manured places, and it is widespread. We have it from Japan, Australia, Samoa, and as to Europe it is as frequent as it is in the United States. We were puzzled for years as to whether Naucoria

semiorbicularis and Naucoria pediades were the same plant or not. Fries evidently called it Naucoria pediades when he found it growing, which he stated "vulgatissimus," but he also maintained semiorbicularis, distinguishing the former as convex, the latter as hemispherical, and by the color. Cooke gave illustrations of differently colored plants and transposed the colors, giving to semiorbicularis the color of pediades and to the latter the (reputed) color of the former. My work with the agarics in Sweden convinced me that it was Naucoria pediades of Fries, and then later when I found it in France I was convinced it is semiorbicularis, as was much better figured than named, by Bulliard. We have a feeling that Naucoria scleroticola is Naucoria semiorbicularis from a sclerotium, but we do not know whether the sclerotium is an occasional occurrence, or whether the plant habitually has sclerotia. If the latter, it is a strange oversight for mycologists to make for a hundred years for such a common species.

Father Boutlou wrote us, "all the Naucorias in my garden have sclerotia."

In a subsequent letter he advises, "since I wrote, the Naucorias have dried up and disappeared, the sclerotium has emptied itself and the hard skin alone is left."

POLYSTICTUS OBSTINATUS, MAXIMUS AND HIRTELLUS

POLYSTICTUS OBSTINATUS, FROM W. SMALL, AFRICA. We have gone over our specimens of this rather frequent species, in connection with Mr. Small's sending. It is an Eastern species and occurs in Java, Samoa, Philippines, Africa, but not in the American tropics. Mr. Murrill confused it with Polystictus maximus of the American tropics and his Philippine determinations under the latter name should be corrected to Polystictus (or Trametes) obstinatus, it being about as good a Trametes as it is a Polystictus. The context is always slightly colored, very pale in some Java collections, but usually about buff-yellow. In one collection that we have from Dr. Braun, German Africa, it is darker, about aniline yellow. When young as some of Mr. Small's collections, the surface is unicolorous, with a matted tomentum which partly disappears from older specimens leaving glabrous, bay zones. Old collections such as we made in Samoa, have smooth, hard, dark, indurate surface. As to the name we shall continue to use the name given by Cooke in 1883, although it is not possible that such a common plant could be a "new species" at such a late date. A species, of which 30 collections have been received by us in ten years, must have reached Europe before 1883. The old fellows must have had it although what they called it we do not know. Polystictus Meyenii, named by Klotzsch from Philippines in 1843, is said to be the same plant, though the type at Berlin is endorsed as being Polystictus occidentalis, and when we noticed it we thought this was correct. Trametes cornea, as named by Patouillard from China, is surely the same, if Roumeguére's distribution (supposed to be cotype) is correct.

There is an intimate relation between this plant and Daedalea Eatonii of South Africa, but we believe them to be distinct.

POLYSTICTUS MAXIMUS.—This plant of the American tropics is the analogue of Polystictus obstinatus of the East, but is not the same, I think, as has been held. The surface has similar, hirsute covering, which first takes glabrous, bay zones and finally becomes glabrous in very old plants. The context is always white. The pores are not so rigid and are disposed to become irpicoid when old. The spores, recently observed fresh in Cuba, are cylindrical, 4 x 12 straight. The whole plant is more flaccid than the Eastern plant, never takes the rigid Trametes form. This is a common species in American tropics. First called Polyporus labyrinthicus by Montagne, it was changed to Irpex maximus when Berkeley pointed out that it could not be the former. What Fries called it I do not know, but it is probably his Trametes cingulatum from Brazil.

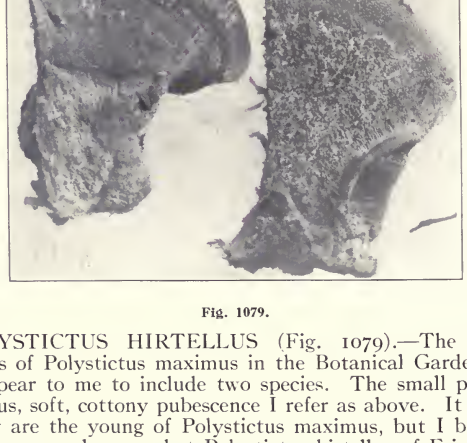


Fig. 1079.

POLYSTICTUS HIRTELLUS (Fig. 1079).—The abundant collections of Polystictus maximus in the Botanical Garden at New York, appear to me to include two species. The small plants with unicolorous, soft, cottony pubescence I refer as above. It is possible that they are the young of Polystictus maximus, but I believe not. Of course no one knows what Polystictus hirtellus of Fries was, but it came from this region (Mexico) and appears to answer the description.

NOTES ON THE XYLARIAS

We shall be very glad to receive from any correspondents, particularly from tropical countries, specimens of Xylarias. We have done considerable work on the genus, and have photographs of all the historical specimens we noted in the various museums of Europe. Xylarias will be found abundantly in every locality, usually growing on rotten logs.

XYLARIA RADICANS, FROM P. HYAT VANDERYST, CONGO, BELGE (Fig. 1080).—Clubs 1—1½ cm. long by 4–5 mm. thick, obtuse, all fertile, sessile, or rather there is no distinct stipe from the rooting base. Rooting base 2–3 cm. long, 3 mm. thick. Surface even, greyish black, the perithecia protruding but little. Spores 5 x 12. This species evidently grew in the ground, the clubs on the surface. The rooting bases are all broken and they were probably attached to a buried stick. I have no notes of any species with this habit, excepting Xylaria radicata (bis) which, with its rooting base "a cm. thick," this can not be. There is an African species that I do not know, excepting from accounts that it has the habit of growing from buried sclerotia formed in termite nests. It is represented as having a long, uniform, cylindrical club. Perhaps this is a variation of that species (Xylaria nigripes).

Fig. 1080.

XYLARIA ALBOMACULATA, FROM M. R. ESPINOSA, CHILE (Fig. 1081).—Clubs slender, strongly rugulose with the protruding perithecia, spotted with little white discs (over the mouths of the perithecia?). Fertile portion 2–3 cm. long, 2 mm. thick, sometimes tipped with a slender, sterile apex of equal length. Stroma

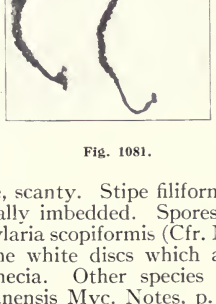


Fig. 1081.

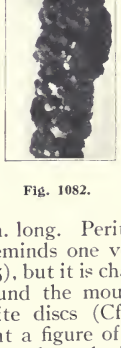


Fig. 1082.

white, scanty. Stipe filiform, smooth, 1–2 cm. long. Perithecia only partially imbedded. Spores 7 x 14. This reminds one very closely of Xylaria scopiformis (Cfr. Myc. Notes, p. 675), but it is characterized by the white discs which appear to be around the mouths of the perithecia. Other species have similar white discs (Cfr. Xylaria Guyanensis Myc. Notes, p. 649). We present a figure of the plant, natural size, also an enlargement (Fig. 1082), to show the little white spots from which it gets its name.

XYLARIAS WITH CONIDIAL SPORES BORNE ABOVE THE CLUBS

XYLARIA FIMBRIATA, FROM J. A. STEVENSON, PORTO RICO.—I have a photograph, made at Kew, of the conidial state (Fig. 1083) of this plant, labeled as above. As far as I know it was never published. If Xylarias were intelligently classed, one section, and a small one, would be devoted to the species that bear their conidial spores on branches above and develop the ascus spores on a club below the conidial branches. At present the section would embrace but two species Xylaria fimbriata and Xylaria comosa.

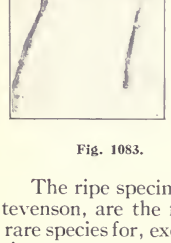


Fig. 1083.

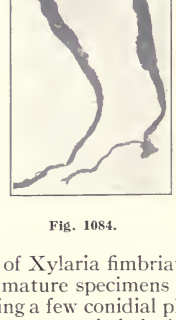


Fig. 1084.

Fig. 1085.

The ripe specimens of Xylaria fimbriata (Fig. 1084), sent by Mr. Stevenson, are the first mature specimens we have seen. It must be a rare species for, excepting a few conidial plants at Kew, I did not find it in any museum of Europe, nor is it included in Theissen's or Starbäck's recent account of South American species. The species grows from the ground with a slender, rooting base. The clubs are cylindrical, rough with the prominent perithecia. The apex is crowned with the white remains of the conidial branches. Spores are small, about 4 x 8. Mr. Stevenson sends also the conidial state (Fig. 1085). The conidia are borne on fimbriate branches at the end of the club. Our best thanks are extended to Mr. Stevenson for material which enables us to get this species straight.

XYLARIA COMOSA (Fig. 1086).—In connection with Xylaria fimbriata we consider this species, which bears its conidial spores on branches above in a similar manner. It was named by Montagne, who gave a characteristic though diagrammatic figure. The type is still preserved at Paris. It seems to be not rare in South America, though not recorded from the West Indies. Our figure, made from specimens distributed by Rev. Rick, is characteristic The clubs, usually ovate or short, cylindrical are quite distinct from the stipe. They are usually marmorate with little white spots. Spores (teste Theissen) large, 7–11 x 26–38.

Fig. 1086.

Fig. 1087.

SYNONYMS (AND ALLEGED).—Theissen gives the following synonyms: Xylaria tigrina, as distributed by Rick is this species whatever it may be in original sense. Also Xylaria barbata as illustrated by Starbäck. Xylaria ramuligera is a conidial state apparently. Xylaria collabens, we know only from Montagne's account and figure. We found no type at Paris. But from the figure it can not possibly be this plant. Xylaria eucephala is also known only from the figure from Malay, which has no resemblance to Xylaria comosa. I think comosa is confined to the American tropics.

XYLARIA FURCELLATA.—We present a photograph (Fig. 1087) of this "species," all that is known, which was "described" from India thirty years ago, and to this day is only known from the "type locality." Berkeley got it years before, but it was so poor he would not publish it, but Cooke dug it out and gave it to "science." He also improved on nature by making a drawing of it that in no way resembles the plant. Needless to say, nothing is known about Xylaria furcellata except that it appears to have its conidial spores borne above. Mycological literature would be better off if it were not encumbered with it.

THE GLOBOSE XYLARIAS

There is a small section of Xylaria, characterized by globose or subglobose form. Most Xylarias are club shaped. It is probable that some of these globose Xylarias have in old times been classed as Hypoxylons, but as we have never worked over this genus we do not know. This introduces the question of what is the distinction between globose Xylaria and Hypoxylon. The only difference we are able to point out is that Xylaria is stipitate and Hypoxylon sessile and usually broadly attached. Most Hypoxylons that we know have carbonous stroma, and Xylarias white stroma, but I do not know that that applies to all Hypoxylons. We have specimens of three subglobose Xylarias as follows:

XYLARIA RENIFORMIS, FROM M. R. ESPINOSA, CHILE (Fig. 1088).—Plant black, with a short, smooth, glabrous stipe. Club depressed, globose with concave base, rugulose in drying. Stroma hard, white, becoming hollow. Spores 6–8 x 28–30. This, known only from South America, was named by Starbäck. Theissen refers it in error to Xylaria obovata.

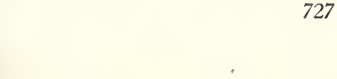


Fig. 1088.

XYLARIA HEMIGLOSSA, as illustrated from New Caledonia has same size and shape as Xylaria reniformis, but small spores 5 x 7–8.

XYLARIA FIBULA (Fig. 1089).—We present a figure of a specimen at Kew, labeled Xylaria fibula, by Massee, but not the plant published by him under this name. The plant he so published he labeled Phacostroma fibula, and in my opinion it is not a Xylaria and should I publish it I would use Massee's generic name, leaving the name Xylaria fibula open for this plant. The genus Phacostroma is a flat sessile, cushion shape plant, with soft, fibrillose, carbonous tissue, quite different from the genus Xylaria. I do not know why Massee, after so labeling his specimens, should publish it under a different name.

Fig. 1089.

Xylaria fibula has a concave base, similar to Xylaria reniformis. It differs in the smooth, even surface. I have no memorandum of the locality whence it came, as when I photographed it I supposed (naturally) that it was the plant he had so published.

XYLARIA OBOVATA, FROM T. S. BRANDEGEE, MEXICO, AND T. J. COLLINS, GUATEMALA (Fig. 1090).—Plant dark brown, obovate or globose, tapering into a short, concolorous stipe. Surface even, glabrous, not rugulose in drying. Stroma white or alutaceous, soft, pithy, becoming hollow. Spores 6–8 x 28–32. In the West Indies we judge this is not rare. It is quite distinct from all related species by its soft stroma.

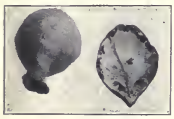


Fig. 1090.

SYNONYMS.—Xylaria tuberoides, discovered in Brazil by Rehm. Xylaria collabens as illustrated by Cooke, which, however, has no resemblance even remote to Montagne's illustration and can not possibly be his plant, although no one knows what it is. Penzigia obovata, as juggled by Spegazzini. The plant is a true Xylaria, with no relation to Penzigia in the type idea. Xylaria Duchassaingii, named by Rehm from Guadaloupe, is surely (and fortunately because of its barbarous name) the same as Xylaria obovata.

ALLEGED SYNONYMS.—Xylaria dealbata from South America, not possible. Hypoxylon avellana from Borneo, not at all probable. Penzigia actinomorpha from Brazil is for me a synonym for Xylaria dealbata.

Fig. 1091.

XYLARIA RIDLEYI (Fig. 1091) as named at Kew, from Singapore, appears to me to be same as Xylaria obovata. The stroma in the specimens photographed appears to be curiously two lobed, reminding me of a coffee berry. Of course if this is a feature of the plant it is not a synonym of Xylaria obovata. The spores are given smaller also, 4–5 x 18–20.

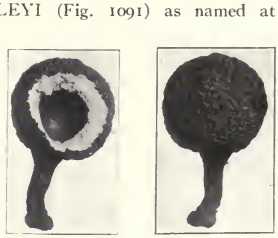


Fig. 1092.

XYLARIA CAVERNOSA, FROM J. P. MOUSSET, JAVA (Fig. 1092).—Club globose, black, wrinkled. Context white, hard, hollow. Stipe distinct, black, smooth. Based on a single, immature specimen, we name it simply to have a name for it in our museum. It was referred for us to Xylaria obovata, but that is not possible.

RARE OR INTERESTING FUNGI RECEIVED FROM CORRESPONDENTS

CLAVARIA NIGRICANS, FROM M. ESPINOSA, CHILE (Fig. 1093).—Simple, erect, 1-1½ cm. high, black. Stipe 2 x 5-7 mm. quite distinct from the fruiting portion. Head thicker than the stipe, rugulose plicate. Cystidia none. Spores 6 x 10, hyaline, smooth, laterally apiculate, guttulate.

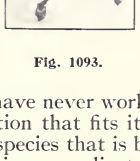


Fig. 1093.

Fig. 1094.

We have never worked over the Clavarias, but are unable to find a description that fits it. It is an ambiguous Clavaria, for we know no other species that is black, and Clavarias are not supposed to have distinct stipes nor plicate heads. There is a record of a black Clavaria in Europe, but in the sense of Fries at least, it turns out to be a Geoglossum. This little plant grew in the ground and has the general appearance of a Geoglossum and we supposed it was a Geoglossum until we examined it "au microscope." A "new genus" might be made for it, or it might be put in Physalacria but it does not fit either in Clavaria or Physalacria very well. Our Figure 1094, which is enlarged sixfold, will give a correct idea of this little plant, and suggest the advisability of inventing a new name for the genus.

POLYSTICTUS DIALEPTUS, FROM T. HUNTER, AFRICA (Fig. 1095).—Pileus thin, flaccid, dimidiate, largely resupinate. Surface appressed, tomentose, with raised zones, brown. Context thin, brown. Pores fleshy, minute brown. Setae none. Spores oblong, abundant, 6 x 12, hyaline, smooth.

These are the first specimens I have seen and it is referred to Fries' species (of which no type exists) from the description, which it answers in a way, and which was from the same region. It is a

plant that goes in same section as Polystictus occidentalis. The abundant spores, unusual in this class of plants will easily fix it. Of course, in absence of types nothing positive can be stated as to the

Fig. 1095.

identity of the old species, but I think it well to refer plants to old descriptions rather than propose new names. This is doubtful however, for it does not have "an incurved blackish margin" nor are the pores "pale yellow."

LYCOPERDON CEPAEFORME, FROM MISS MARGARET L. FLOCKTON, AUSTRALIA.—This collection (Fig. 1096) shows in a remarkable way the rooting system of the species in Australia.

Fig. 1096.

The plant comes frequently to me from Australia and generally the specimens have a large tap root. We have often noted this and also that the same species from Europe and the United States (where it is

likewise common) usually has a small root about as shown in Figure 1097. We can not explain this. The different soil may have something to do with it, but we believe that the large rooting system is a natural habit that the species has acquired in Australia.

Fig. 1097.

Lycoperdon cepaeforme, with shiny surface, from Miss Margaret L. Flockton, Australia. When we first opened this package and saw the smooth, shiny surface of the specimens we thought we had something new. But when we came to compare it with Lycoperdon cepaeforme we found it same in every other respect. Of course this collection could be named for it is quite distinct from the usual collection, but we think it better to record that in Australia, Lycoperdon cepaeforme very rarely has a smooth, shiny surface and the color is also darker than usual, with no yellowish tint.

NIDULA MACROCARPA, FROM M. ESPINOSA, CHILE (Fig. 1098).—Cups about a cm. high, 6-7 mm. thick at summit, at first appressed tomentose, becoming smooth and brown when old. Peridioles a scant mm. brown, smooth. Spores abundant, hyaline, smooth, 5-6 x 12-16 mic.

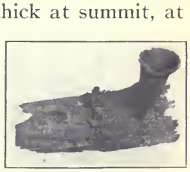


Fig. 1098.

The genus Nidula is an excellent genus proposed by Miss White, from Northern United States and Canada, only a few years ago. It has the cups and epiphragm of Crucibulum and the peridioles of Nidularia. (Cfr. Nidulariaceae, page 10.) It has since reached me from Australia, Japan. India, though everywhere rare. This species is very close to Nidula microcarpa, with same cups and peridioles, but spores about twice as large. It is probably best classed as a large spored form.

POLYPORUS ATROSTRIGOSUS, FROM W. A. SCARFE, NEW ZEALAND (Fig. 1099).—Sessile, dimidiate, fleshy. Surface *black*, rough. Flesh white, with pale greyish tinge. Pores irregular, medium. Spores 1 x 5, allantoid, curved.

Fig. 1099.

With the same color, flesh and same spores, this is close to Polyporus caesius, but the peculiarity of the black surface contrasting with the white flesh is such that we have no hesitation in referring it. We would include it with Polyporus caesius in Section 85. We considered it incidentally on page 375 of our Apus

Polyporus pamphlet, but the type specimen we thought inadequate to give a correct idea of it. Mr. Scarfe's specimen, while small, definitely fixes it.

POLYSTICTUS LUTEO-OLIVACEUS, (STIPITATE FORM) FROM W. SMALL, AFRICA (Fig. 1100).—Petaloid, with a short, thick lateral stem, unicolorous, tawny olive (Ridgway). Pileus thin, rigid, suborbicular. Surface smooth, dull. Context soft, concolorous. Stem a cm. thick, dilated at base, soft texture. Surface concolorous and similar to that of the pileus. Pores very minute, shallow, regular. Spores not found.

Fig. 1100.
Polystictus luteo-olivaceus (stipitate form).

If Mr. Small had cut off these pilei from the stems and sent them separately they would have been referred to Polystictus luteo-olivaceus to which they accord perfectly in every character excepting they are thinner. It is very strange that a species known from many sessile collections, and growing flat, attached by a broad base to the host, should take a form produced from a stipe. When we first received the plant we could not believe that it was a form of Polystictus luteo-olivaceus, and proposed to call it Polystictus pedatus. We have since noted where a stipitate form is recorded as common in Africa, by Miss Wakefield, growing with the ordinary form, and there is no further question in our mind. But before we received these specimens, we had seen many specimens of Polystictus luteo-olivaceus, and never a sign of a stipe.

T. S. BRANDEGEE

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 52.

CINCINNATI, O. DECEMBER, 1917.

n. 1845. P. A. Saccardo dec. 1906.

UNIVERSITY OF VIRGINIA

JAN 20 1942

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

P. A. SACCARDO

About ten years ago we gave in Mycological Notes, page a small portrait of Prof. Saccardo taken in 1891. We are gl able to present a larger, and more recent photograph, m ten years ago, 1906. Prof. Saccardo was born in 1845 and i of age at present.

Few men have been able to accomplish as much work time as has been done by Saccardo, who has issued 22 · umes of Sylloge Fungorum, containing Latin descriptions of 72,438 fungi, translated from every language of the world. We are advised that another volume is now under way.

As we gave in our previous notice of Prof. Saccardo an expression of the magnitude of this work and the thoroughness with which it has been done, we will not repeat it here. We will only add that we doubt if any other branch of science has as thorough, accurate and complete a summary of the proposed species as has mycology in the twenty-two volumes that have been issued. We hope that Prof. Saccardo has many years ahead of him to continue the work, and we doubt if anyone else would have the courage or the facilities to undertake it.

PHELLORINA STROBILINA

FROM MISS A. V. DUTHIE, SOUTH AFRICA

Miss Duthie does have the luck to get a lot of rare "puff balls." This is the fourth rarity that she has sent me. Phellorina strobilina has heretofore been known from two collections, both from Australia. One is at Berlin, named as above (1880), the other at Kew, named Xylopodium ochroleucum, by Cooke (1887). This is the first specimen I have ever received, and the first specimen collected in Africa, nor has it been collected in Australia for thirty years.

Phellorina strobilina (Fig. 1101) is a very remarkable plant, the peridium has large, thick, pyramidal scales and the plant was well named in reference to a pine cone. The dehiscence is no doubt by the breaking apart of these thick scales. It has no sign of a columella, and is filled with a uniform, pale, brownish gleba. The spores are 6–7 mic. and tuberculate. They are ver- pale color under It has no true capillitium, but shreds of a hyaline membrane 'ly mixed with the spores. The "capillitium thread," as Cooke's figure, as well as the "allantoid, sporiform cor- .hat he imagined and showed, are conspicuous by their ce.

Fig. 1101.
Phellorina strobilina

HISTORY.—Mueller, who forty years ago was very active and prominent in Australian botany, but did not know anything about fungi, sent a lot of fungi to Germany. I do not know that I have it straight, but I think they were sent to de Thuemen, who turned them over to Kalchbrenner, who was a prominent amateur worker, and was just about as competent to name foreign fungi as I would be to

write a treatise on music, and I do not know one note from another. This spe
was collected by Thozet (722) and the specimen is sti at Berlin. Kalchbren
published it (Grevillea, 1874) as Scleroderma strobilinum, although he should ha
known it was not a Scleroderma, had he known much about the subject. Fortunately
he gave it a good specific name. Afterwards Kalchbrenner got into tions wit
Cooke, to whom he sent a number (mostly little frustules) of these Au alian fun
This particular specimen I did not find at the Kew Muse m.

Under the joint name of Kalchbrenner and Cooke although I think it a
mostly Cooke), these Australian fungi were rehashed in Grevillea (
sequent issues) and in this paper the plant is called Phellorina st
correctly classed.

In 1887, Cooke got a young specimen from the Darling Rive
although he had correctly named the plant seven years before, he d
a new species and called it Xylopodium ochroleucum. He afterwa
name, gave an excellent figure (Fig. 155, plate 16) in the Handb
the microscopic characters which were all incorrectly sho

In 1886, Forquignon, who seems to have been a prot
at Dijon, France, wrote a little work which he entitled "
rieurs," with a chapter on "genres exotiques." As all he k
figures prepared by Quélet, and probably never saw a sp
life, naturally he discovered some wonderful "new genera"
based on a figure that no one to this day knows anything

When De Toni compiled the seventh volume of Saccardo
bilina in Forquignon's genus and called it Areolaria strobilina.
"species," and no two of the three belong to the same genus.
Engler and Prantl puts the species back in Scleroderma, where i
and gives an "original" figure which looks very much like a Fr
has no resemblance, however remote, to this plant. Cooke i
very peculiar bodies that he calls "allantoid, sporiform corp
where he got the idea, for there is nothing whatever in the
suggest them even. But Cooke, as I have often remarked, was a
in drawing things that do not exist.

The specimen sent by Miss Duthie was collected in Rhodesia.
men of a very similar plant, and possibly the same, has been collected
States and called Whetstonia strobiliformis. It appears to differ, howe
permanent cells in the gleba. (Cfr. Mycological Notes, page 270.)

ALEURODISCUS VITELLINUS

FROM M. R. ESPINOSA, CHILE

We adopt the above name for the plant as it is perhaps th
of several genera to which it has been referred. At the same ti

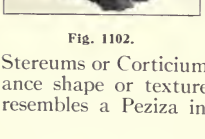


Fig. 1102.

think it is better in Cyphella, thoug
widely differs from the main character o
both genera. A "new genus" should be made
for it, and it is a monotypic genus, as no sim-
ilar plant as far as known occurs elsewhere
than in Chile. The genus "Aleurodiscus" o
modern writers is only an artificial product,
and includes all Basidiomycetes that have
large spores and large basidia. A more
incongruous assortment could not be gotten
together. In the main Aleurodiscus are
Stereums or Corticiums with no analogy to this plant either in appear-
ance shape or texture. Excepting under the microscope this plant
resembles a Peziza in flesh, form and habits.

Many years ago Gay sent a collection of Chilean specimens to . . Both Montagne and Léveillé worked with it. The latter called this plant Exidia vitellina, though why an Exidia I do not ... t was not an Exidia even in those crude days. Montagne ood illustration of it in Flora Chilena. Berkeley referred from Tasmania, evidently from Montagne's picture. I the specimen at Kew, but judging from Berkeley's ... s something entirely different.

... rs in Saccardo as Hirneola vitellina taken from Fries ... y never saw Léveillé's specimen, but was only guessing ... é's short account. Patouillard first called it Cyphella ... later Aleurodiscus vitellinus. As previously stated it ... nblance to other species of either genus, and to the ... ng large spores and basidia. I am particularly ... t with an interesting history from Mr. Espinosa. ... itellinus "egg yellow" does not well express its ... a informs me that when fresh it is orange and the ... more brown. Until I sectioned the plant, I took it ... ur photograph (Fig. 1102) is made from a specimen ... d.

THELEBOLUS LIGNICOLA

STEWART H. BURNHAM, NEW YORK

... an a century ago (1790) Tode published a work with ... er crude it is true, but many species, especially the old ... t their names from this work of Tode. Among others a ... nous plant (his fig. 56) that Tode represented as ejecting ... atinous ball, somewhat in the same manner as Sphaerobolus (Cfr. Mycological Notes, p. 431). Tode named his plant ... , and Fries put all these genera that had the spores in ... is" together as a family. The structure of these "balls,"

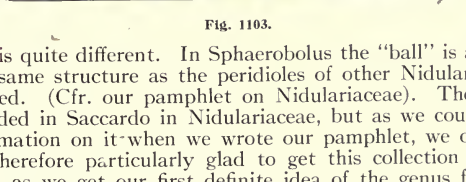


Fig. 1103.

however, is quite different. In Sphaerobolus the "ball" is a peridiole with the same structure as the peridioles of other Nidulariaceae, as now classed. (Cfr. our pamphlet on Nidulariaceae). Thelebolus is still included in Saccardo in Nidulariaceae, but as we could not get any information on it when we wrote our pamphlet, we omitted it. We are therefore particularly glad to get this collection from Mr. Burnham, as we get our first definite idea of the genus from these specimens. Thelebolus has no place in the Nidulariaceae. The nature of the peridiole is entirely different.

Thelebolus lignicola, as we call these sp[illegible]m
nous plant (Fig. 1103, natural size). As [illegible]
apex, and a small viscid, closed, white ba[illegible] [illegible] e of a l[illegible]
seed, is squeezed out. Our Fig. 1 [illegible]04 show[illegible] of the plants (enlarged)
and Fig. 1105, one that has thro[illegible] [illegible] idiole. Tode represents
this peridiole as ejected with [illegible] ce, which we are unable to
confirm. The structure of th[illegible] [illegible]ole has been differently shown
by recent writers. Brefeld [illegible] s it as a cavity filled with spores
only. While a good microsc[illegible] [illegible]ne was in error. The spores are
borne in asci, each containin[illegible] [illegible]merous spores. The walls of the
asci are very thin and trans[illegible] t, and are seen with difficulty, but
in one mount we mad[illegible] [illegible]nde[illegible] [illegible]e influence of the water, the spores
could be seen streamin[illegible] the asci. Zukal and Heimerl both
show the structure co[illegible] [illegible]y.

Fig. 1104.

Fig. 1105.

In the most recent works Thelebolus is classed in the Ascoboleae in the section with hyaline spores and close to Ryparobius, which has the same spores arranged in the ascus. Of course, it is stretching a point to class in the Discomycetes, a plant that has its asci not in a disciform receptacle, but in a closed peridiole.

THELEBOLUS LIGNICOLA.—Small, gelatinous, pale, almost white, about 2–3 mm. high. Rupturing at the apex and exuding a small (1 mm.), white, gelatinous peridiole. Spores hyaline, $3\frac{1}{2}$ x 4–$4\frac{1}{2}$ mic., smooth, borne many (about 60–100) in each ascus.

It grows gregariously on rotten wood. There have been five species of Thelebolus listed, all little, yellow plants on manure. We are unable to reconcile this pale (almost white) species on rotten wood with either, and have therefore proposed a new name for it. Mr. Burnham sent us an ample fresh collection. We doubt if we could have done anything with it from dried material.

ALLOGASTER GLOBOSUS

A. SCARFE, NEW ZEALAND

Globose, hollow, [illegible] ceding fr[illegible]n strong mycelial, rooting strands. Surface smooth, dark[illegible] a[illegible] [illegible]k. Flesh about a mm. thick, of three layers; a thin cortical layer, an intermediate, fleshy gelatinous layer, and a thin black, tenacious, gelatinous lining layer. The latter bears the spores, and under the microscope is resolved into a mass of spores, with a few delicate subhyaline hyphae. The spores are hyaline, smooth and straight 1½ x 5 mic.

Fig. 1106.

I do not know, but I presume that the plant is related to the Phalloids. While the gleba has no odor, the spores are the same and the gleba suggests a Phalloid.

There is a well known species of Phalloid (or better a related family), Phallogaster saccatus, which bears its gleba as a Gasteromycete (Cfr. Phalloid, Synopsis, page 71). While there are strong differences between Mr. Scarfe's plant and Phallogaster, I think it better to refer the plant to this genus for the time being at least, until we learn more about it. If Mr. Scarfe will watch for the plant and send some *very young* specimens in formalin before the gleba has deliquesced, its exact relation to Phallogaster can be solved. Our Fig. 1106 represents the plant, natural size, and Fig. 1107 the inside of a section. Mr. Scarfe sent the plant wrapped in cotton soaked in formalin, and it reached me in perfect condition.

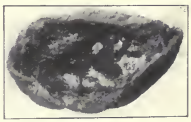


Fig. 1107.

A few years ago Mr. Murrill found in Jamaica a similar plant, which he published (Mycologia, Vol. 2, p. 25) as Protophallus jamaicensis. While I have not seen the plant, a close reading of his description indicates to me that it may have been better to have referred this to the genus Phallogaster.